Improving maternal and newborn health globally: the Making it Happen programme

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About the authors

The Centre for Maternal and Newborn Health, headed by Professor Nynke van den Broek, is a global centre of excellence within the Liverpool School of Tropical Medicine, UK. The centre’s aim is to improve the quality of life of mothers and babies worldwide by reducing mortality and morbidity. We design and implement innovative health care packages to improve the availability and quality of care. We offer unique expertise in research and developing evaluation frameworks, and we partner strategically with governments and global agencies to ensure the lessons learnt from our work are shared widely. All of the authors are experienced health care professionals who have worked in resource poor areas (as obstetricians, midwives, or nurses) and who implement the Making it Happen programme.

Maternal and newborn health: the global picture

Across the world, maternal and neonatal mortality and morbidity remain unacceptably high. Approximately 287,000 women die each year from complications during pregnancy, childbirth and the postpartum period (WHO et al 2012). An estimated three million babies worldwide are stillborn and additionally three million babies die in the first week of life, with close to half of all newborn deaths occurring within 24 hours of delivery (Cousens et al 2011, Liu et al 2012). The overwhelming majority (99%) of maternal and neonatal deaths occur in low income countries, predominantly in sub-Saharan Africa and South Asia.

In addition to the significant number of maternal deaths each year, 15-20 million women will survive pregnancy and childbirth but suffer lifelong morbidity such as incontinence, severe anaemia, infertility and chronic pain. These morbidities usually go untreated and can result in disability and chronic ill-health (Kobliński et al 2012). Women who suffer severe morbidity such as incontinence as a result of fistula, or who are infertile and not able to give birth to live babies, are often socially and economically excluded from their families and communities.
Important global changes have occurred in the last few decades. These include an increase in the proportion of births taking place in health facilities, with 70% of women currently estimated to receive skilled attendance at birth worldwide and 70% of women currently estimated to receive skilled attendance at birth worldwide and 70% of women currently estimated to receive skilled attendance at birth worldwide and a reduction in maternal deaths by 47% and newborn deaths by 28% since 1990 (WHO et al 2012, WHO 2013). Despite these significant improvements, progress is very slow in many settings and it is clear that the Millennium Development Goals (MDGs) 4 and 5 will not be met by 2015 (UN 2013, Bryce et al 2013, Peterson et al 2012) (Box 1). There is still much to be done to prevent the many unnecessary and often preventable deaths that occur every day.

**Why do women and babies die?**

Eighty per cent of maternal deaths result from direct obstetric complications such as eclampsia, sepsis and severe haemorrhage (mostly after birth), hypertensive disorders of pregnancy and complications of unsafe abortion. The remainder of deaths result from, or are associated with, diseases such as malaria, tuberculosis and HIV/AIDS (Khan et al 2006).

The leading causes of newborn death are prematurity, infections and intrapartum complications including asphyxia and birth trauma, most of which are preventable with the timely delivery of effective health interventions during pregnancy, birth and the early postpartum period (WHO et al 2011, Blencowe 2012).

**What works to improve maternal and newborn outcomes?**

*Implementation of effective health interventions as a continuum of care*

It is estimated that approximately two thirds of newborn deaths and three quarters of maternal mortality could be averted by scaling up available, evidence-based health measures at birth (WHO 2011). Maternal, newborn and child health are closely related and the health care packages that improve outcomes for mothers and babies must be provided through a continuum of care approach. These include: family planning services, antenatal care, clean and skilled care at birth, neonatal resuscitation or assisted delivery where indicated at time of birth and, emergency obstetric care when complications arise, exclusive breastfeeding, clean umbilical cord care, thermal care and early treatment of sepsis for the baby with postnatal care that is inclusive of both the mother and the baby.

Basic and Comprehensive Emergency Obstetric Care (EmOC) have been internationally defined and agreed as minimum and essential care packages that need to be available to all pregnant women during birth, the postpartum period and to newborn babies (WHO et al 2009). These are the key interventions that effectively address the major causes of morbidity and mortality and include administration of parenteral antibiotics, anticonvulsants and uterotonic drugs, neonatal resuscitation, assisted vaginal delivery, removal of retained products of conception, manual removal of the placenta, blood transfusion and caesarean section (Box 2).

**Functioning health systems**

It is important that health care providers are able to work within a well functioning health system, ie, an ‘enabling environment’ where good quality care can be provided.

A well functioning health system that provides an ‘enabling environment’ for health care providers means that there are sufficient human and financial resources available, appropriate use of interventions by health care providers and the right policies and standards in place to support midwifery care including emergency obstetric care (Adegoke et al 2011). Essential drugs such as antibiotics, anti-convulsants (magnesium sulphate) and uterotonic drugs (oxytocin) and the necessary equipment in working order must be present. There also needs to be a regular supply chain and an effective emergency referral system, including transportation (Maclean 2003).

There is universal agreement that the minimum acceptable coverage for a population of 500,000 is 1 CEmOC facility and 4 BEmOC facilities which are equitably distributed across the country. Surveys have shown that, whereas the number of

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**Box 1. Millennium Development Goals 4 and 5**

| Goal 4. | To reduce child mortality |
| Goal 5. | To improve maternal health |
| 5a | Reduce by three quarters the maternal mortality ratio |
| 5b | Achieve universal access to reproductive health |

Source: UN 2014

**Box 2. Signal functions of Basic (BEmOC) and Comprehensive (CEmOC) Emergency Obstetric Care**

| Basic EmOC | Comprehensive EmOC |
| iv/im antibiotics | All included in Basic EmOC plus: |
| iv/im oxytocic drugs | Caesarean section |
| iv/im anticonvulsants | Blood transfusion |
| Manual removal of placenta |
| Removal of retained products of conception (eg by manual vacuum aspiration) |
| Assisted vaginal delivery (eg ventouse delivery) |
| Resuscitation of the newborn baby using a bag and mask |

Source: WHO et al 2009
health facilities (e.g. hospitals and clinics) built are usually sufficient or even exceed minimum coverage rates, these facilities are often not able to provide all the basic signal functions of EmOC, even where they are designated to do so (van den Broek & Hofman 2010, Ameh et al 2012).

With an increase in the number of women accessing care at a health facility in recent years a refocus on improving the quality of care has become increasingly important in order to ensure a continued reduction in maternal and newborn deaths and to further increase the demand for facility based births (van den Broek & Graham 2009). In many communities, women’s perception of the quality of care in health facilities is a well documented determinant of their use.

**Skilled birth attendants**

All women should have access to skilled care during pregnancy and childbirth to ensure prevention, detection and management of complications. Assistance by properly trained health personnel is key to lowering maternal deaths. As it is difficult to accurately measure maternal mortality, and model-based estimates of the maternal mortality ratio cannot be used for monitoring short term trends, the proportion of births attended by skilled health personnel is used as a proxy indicator for MDG5a. Although globally 70% of women now deliver with the assistance of a professional health care provider, this is only 47% in low income settings, around 78% in middle income settings and 99% in high income settings (WHO 2013).

Many low and middle income countries are challenged by an ongoing shortage of frontline health care workers, skills mix imbalance and maldistribution of staff resulting in over-stretched health care systems, supported by overburdened and stressed health care workers (Chen et al 2004). In addition a lack of knowledge and skills is often a key reason why currently

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known evidence-based care practices for women and babies are not in place (Fauveau & de Bernis 2006).

A skilled birth attendant (SBA) is defined as someone who has gained proficiency in managing normal pregnancy, childbirth and the immediate postnatal period and is also able to identify, manage and refer when complications occur (WHO et al 2004). In practice, a variety of health care providers assist women at the time of birth and are expected to be able to provide skilled birth attendance and other aspects of maternity (or midwifery) care in low and middle income settings. However in many cases the pre-service training these different cadres have received will not have included all the aspects of care they may be required to provide, especially with regard to the care required when complications occur at time of birth. In some cases health care providers are trained but not legislated to perform the signal functions of EmOC (Adegoke et al 2012, Utz et al 2013).

The lack of skilled health workers is recognised as an impediment to achieving MDGs 4 and 5 — those related to maternal and newborn health (Chen et al 2004). To combat this, WHO et al (2012) recommend task shifting from health workers such as doctors with higher level health training to those with mid-level health training such as midwives and nurses.

The Making it Happen programme

The aim of the Making it Happen (MiH) programme is to reduce maternal and newborn mortality and morbidity by increasing the availability and quality of skilled birth attendance and EmOC. The three main components of the programme are a country specific, competency based training package in the management of common obstetric and newborn complications; strengthening the collection and use of routinely collected maternal and newborn health data and introducing quality improvement methodology. From 2012 to 2015, the programme is being delivered in 11 countries. Eight of these in sub-Saharan Africa (Ghana, Kenya, Malawi, Nigeria, Republic of South Africa, Sierra Leone, Tanzania and Zimbabwe and three countries in South Asia (Bangladesh, India and Pakistan).

An important feature of the approach is to partner strategically with governments, Ministries of Health and global agencies to ensure optimum impact of the work and that key findings and lessons learnt are disseminated appropriately to inform practice and policy. The Centre for Maternal and Newborn Health (CMNH), in conjunction with the Royal College of Obstetricians and Gynaecologists (RCOG) and the World Health Organization (WHO), has developed a standardised workshop package based around the nine signal functions of EmOC. This is adopted and adapted by each country involved in the MiH Programme. The three to five day workshop package includes lectures, scenarios, demonstrations and practical skills sessions, designed to include all cadres of maternity care providers who work in health care facilities providing basic and comprehensive EmOC in resource poor areas. By using a standardised training approach the MiH programme helps to change the practice of health care workers by raising standards of practice, increasing competence and reducing variations in quality. The adult learning approach recognises that learners have to contemplate the need for change, be ready to take action to change their practice and be motivated to maintain their new skills (Fry et al 2001).

Health care provider practice

By 2017 the MiH programme aims to build the capacity of 10,000 health workers to provide more, and a better quality of, care at the time of birth and when complications occur. Between June 2012 and December 2013 more than 7,000 health care providers attended the skills and drills training workshops in the 11 countries. Post training assessments show that 84% improved their knowledge and 99% improved their skills after training.

Focus group discussions and in-depth interviews with health care providers visited in their place of work at three, six or 12 months after training have identified behaviour change with improved practices recognised and reported in all country settings.

Overall, a marked change in confidence and motivation — including staff morale — was noted and health care providers reported better planning, coordination and teamwork. They felt encouraged that they could manage the caseload and also provide a better quality of care:

“...My skills have really improved after the training, I have learned a lot and after the training I have practised some of the life-saving skills and I have saved some lives...” (MCH Aide, Sierra Leone).

In Kenya, midwives and nurses expressed how they had gained confidence in the successful use of magnesium sulphate for the management of eclampsia following the skills and drills type workshops. They reported that they also developed a higher degree of autonomy, often being able to start the regimen before the doctor’s arrival.
A doctor in India stated:

“Everybody’s way of working has improved. For nurses who have been trained, there is a definite change. Nurses now initiate treatment when there is a case of postpartum haemorrhage or eclampsia. Before the training they would only start this treatment once the medical doctor, who is very busy, had been able to instruct them to do so — now nurses are more confident to take decisions themselves.” (Medical Doctor, India)

Regarding the management of a baby presenting in the breech position, Kenyan midwives reported that whereas previously this would have automatically resulted in a caesarean section, following the EmONC training they were able to ‘try delivering this baby vaginally’ with successful outcomes. Their increased confidence and level of skill had resulted in the reduction of the number of caesarean sections for breech delivery. However, midwives did acknowledge that they had acquired the skills needed to recognise when a vaginal delivery was contraindicated.

In Pakistan, a group of nurses explained they now start skin-to-skin contact immediately after birth and noted that:

“The mother and baby look beautiful together and happy. The baby doesn’t cry and starts to breastfeed as soon as possible.” (Nurse, Pakistan)

Midwives in Pakistan also reported that the training had improved their neonatal resuscitation technique, resulting in the use of fewer drugs and the cessation of the previously common practice of (unnecessarily) suctioning the baby. Due to an improved quality of care on the labour ward midwives also reported a reduced need to perform resuscitation. Increased confidence led to a more ordered and controlled response, rather than panic and fear, as had occurred in some instances previously.

Midwives also expressed how much more confident they were regarding neonatal resuscitation and the immediate care of the newborn; gaining a sense of satisfaction from the positive outcomes that resulted from using the new skills:

“I’ve tried resuscitating babies with the bag and mask and it really works, you just enjoy it. You just go home happy.” (Nurse-midwife, Kenya)

A significant component of the skills and drills training as part of the Making it Happen Programme is that all different cadres of health care providers attend the workshops together. This has resulted in an improved awareness of each other’s competence and a readiness to work together as a team. Midwives also commented that they worked better with each other to resolve difficult cases and assisted each other in developing newly learnt skills and in the teaching of non-trained staff.

“The experience is that when there is a difficult delivery we normally call for help and assist one another. Possibly in the evening we check our text books and then the following day people are discussing.” (Nurse-midwife, Kenya).
Midwifery staff reported not only working together with their colleagues on the labour ward, but also sharing their new knowledge and skills with nurses from other departments within the facility creating a ‘ripple’ effect. Some labour ward staff commented that although they themselves did not use the Manual Vacuum Aspiration technique they had learnt for removal of retained products of conception, they had trained their nurse colleagues on the gynaecology wards to perform this procedure.

“Although the midwives in maternity are not able to do the MVA, we have trained four nurses from the gynaecology department and actually they are doing the MVA and that has helped because you will find that when the doctors are busy, they don’t have to call. The nurses are now able to manage.” (Nurse-midwife, Kenya)

Summary
Global progress has been made with regard to a reduction in maternal and newborn mortality and morbidity in recent decades, but rates for resource poor settings remain high. Many of the interventions necessary to combat morbidity and mortality are well known, however, the transfer of this information from theory into large scale practice has proved to be a slow process.

A multi-faceted approach will be necessary including: the provision of skilled birth attendants in sufficient numbers and with appropriate skill levels, an enabling environment with adequate provision of supplies such as drugs and equipment, and the availability of these services to women when and where they need them.

As part of the Making it Happen programme, the CMNH trains groups of health care professionals in essential life-saving and emergency obstetric skills, enabling them to provide improved quality of care to women and their babies during birth and postnatally.

Results from the Making it Happen programme have demonstrated that health care providers enjoy the skills and drills workshop package and demonstrate increased knowledge and skills for the management of emergency obstetric and newborn care. The training has also been shown to result in real change in practice, improved confidence and team work and an increase in the number of signal functions of emergency obstetric care as well as the quality of that care. Improvements in the capacity of health care providers to manage emergency obstetric and newborn complications is one strategy that contributes to the reduction in maternal and newborn mortality and morbidity.

If you are interested in volunteering with the Making it Happen programme, please email Tania Vera-Burgos (mnhu@liverpool.ac.uk).

References


