MISSING
MIDWIVES

Blurb to come

savethechildren.org.uk

Save the Children

MISSING
MIDWIVES

Save the Children

MISSING MIDWIVES

Save the Children

Save the Children works in more than 120 countries.
We save children's lives. We fight for their rights.
We help them fulfil their potential.

ACKNOWLEDGEMENTS

This report was written by Kathryn Rawe, Advocacy Officer, Save the Children UK, with support from Sarah Williams, Health Adviser, Save the Children UK, and Kate Kerber, Newborn Health Adviser and Joy Lawn, Director of Global Evidence and Policy, at Save the Children USA/Saving Newborn Lives. Thanks are also due to Nouria Bricki, Lara Brearley, Simon Wright, Patrick Watt and Kitty Arie.

Published by
Save the Children UK
1 St John's Lane
London EC1M 4AR
UK
+44 (0)20 7012 6400
savethechildren.org.uk

First published 2011

Cover photo: Katsina, northern Nigeria. Uleima, holding her baby boy, has been trained by hospital staff in 'kangaroo mother care', a technique of caring for premature babies through skin-to-skin contact, offering warmth and comfort to the baby. It is an alternative to an incubator.
(Photo: Pep Bonet/Noor)

Typeset by Grasshopper Design Company
Printed by [???]

CONTENTS

Trainee midwives in Afghanistan, where there is a drastic shortage of midwives and the highest rate of deaths of newborn babies in the world.

FOREWORD

Globally, we know that there is a shortage of midwives, and there is little doubt of the impact this is having on women and babies, their families and communities all over the world. The tens of thousands of women and millions of babies who die every year from childbirth-related causes are evidence of this.

This report rightly draws attention to that worldwide shortage, because midwives are vital for communities and families, and for improving a country's health, particularly in areas with high maternal and child mortality. Midwives are the key to achieving Millennium Development Goals 4 and 5 on child and maternal mortality. As we approach 2015, it is propitious that Save the Children highlights the deficit. A country is judged by the way it cares for and treats its women within society, and by the maternal and child health services it provides for them. World leaders need to recruit, educate and train midwives as a priority. We know that in countries where the government has invested in essential midwifery services, it has had a dramatic effect on the improving maternal mortality statistics.

It is unacceptable that women continue to die in childbirth in the 21st century because of lack of access to midwives and other midwifery skilled health workers. Volumes of words have been spoken for far too long and it is now time for different actions and strategies. The solution is simple: *the world needs midwives now more than ever*, governments have to invest in midwives, and this challenge lies with world leaders. The challenge is for all of us – charities, like Save the Children, professional organisations, like the Royal College of Midwives, and civil society – to require and work with our governments, in donor or receiving countries, to act, and to deliver this change for families. What are you going to do for the women and children in your country today?

Frances Day-Stirk
Director of Learning, Research and Practice Development
Royal College of Midwives

Keeku died two days after giving birth at home in her village in Pakistan. She was 25 years old. Her baby died too. Her mother-in-law explains what happened.

"During her pregnancy and delivery Keeku was perfectly normal and didn't show any signs of complications. She had her baby at home. There are no health facilities or doctors available in this village. We don't have any female health workers visiting this area.

"So when Keeku started shivering and complaining of terrible pain in her stomach, we rushed her to the hospital, which is an hour and a half drive from here on public transport… She was given blood, but she died immediately afterwards. Doctors said that the placenta became infected in the uterus and it spread into her body and killed her."

Keeku's baby daughter died two months later from diarrhoea.

SUMMARY

'The single most critical person for effective care at the time of birth is the midwife'

The International Journal of Gynecology and Obstetrics[1]

No mother, anywhere in the world, should have to risk her life and that of her baby by going through childbirth without expert care. But every year 48 million women give birth without someone present who has recognised midwifery skills.[2] More than 2 million women give birth completely alone, without even a friend or relative present to help them, making these some of the most dangerous moments of their lives.[3]

The global shortage of 350,000 midwives[4] means that many women and babies die from complications that could easily be prevented by a health worker with the right skills, the right equipment and the right support. There are 358,000 maternal deaths each year, and more than 800,000 babies die during childbirth each year. Millions more newborn lives are lost in the first month of life. If births were routinely attended by midwives and skilled birth attendants with the right training and support, the lives of 1.3 million newborn babies a year could be saved (see page 3).

Save the Children has frontline experience of the power of midwives to save lives from our work in Niger and Angola, for example, where we have trained midwives; in Afghanistan, where we run a midwife college; and in Sierra Leone, where we run clubs for pregnant women and have upgraded health centres to provide 24-hour emergency care during delivery. Our experience around the world has shown us the reasons behind the shortage of midwives and what can be done to address it on both a local level and in terms of international political action.

Stopping women and children dying in childbirth is a moral imperative. Recruiting, training and supporting midwives is also critical to the achievement of the Millennium Development Goals to reduce child deaths by two-thirds (MDG 4) and maternal mortality by three-quarters (MDG 5).

This September, world leaders will meet in New York at the United Nations General Assembly. One year on from the launch of the UN Secretary-General's global strategy on women's and children's health, they will assess progress on their commitments. Governments of rich and poor countries alike must use this meeting to build on the foundations of the global strategy and urgently take further steps to fill the global health worker shortage. Save the Children is calling on governments to make specific commitments and take concrete action towards recruiting, training, paying and deploying more midwives and health workers. With growing awareness and political support for maternal and child health, and key opportunities for change this year, now is the crucial moment to show the world why midwives matter.

EVERY YEAR MORE THAN 2 MILLION WOMEN GIVE BIRTH COMPLETELY ALONE

"Nabuth wouldn't breast-feed and became weaker and weaker every day. Messalina [a health worker] has followed me both during the pregnancy and after the birth, and she was the one who insisted I go to the hospital with the baby. We didn't really have money for the bus ticket, but Messalina insisted. I am very thankful that she was clear and persuasive. Save the Children's health worker saved my baby's life. I am incredibly thankful."

Teresa, Mozambique

1 INTRODUCTION

Every mother will remember the feelings of anticipation, excitement, fear and joy she had before she gave birth. Everyone can imagine what a pregnant woman – a friend, a sister, a wife or partner – will go through as she approaches one of the most significant moments of her life. Now imagine giving birth without anyone in the room with any midwifery training – it becomes a potentially dangerous event.

No mother, anywhere in the world, should have to risk her life and that of her baby by going through childbirth without expert care, but every year 48 million women give birth without someone with the proper medical skills present.[5] Each year there are 358,000 maternal deaths,[6] and 814,000 newborn babies die during childbirth.[7] A million more babies are lost earlier in delivery – stillborn but having been alive in the mother's womb hours or even just minutes earlier.[8] More than 3 million babies die before they are a month old.[9]

Complications that kill hundreds of thousands of women and babies in developing countries are managed effectively in richer countries by a midwife or health worker with the right skills, the right equipment and the support of a health system. Women in the poorest countries are least likely to have a skilled attendant during birth, are much more likely to lose their newborn, and are most likely to die themselves during childbirth.

"I was in labour for almost five days, and in the end, the child came out of my womb dead. I didn't have the assistance of a traditional birth attendant – only my family helped me."

Liknesh, Ethiopia

"At the time of the delivery the bleeding was too much. I felt dizzy and weak and I had a headache. I was very worried that I'd lose my life. I know two women who've died from bleeding too much during childbirth.

"The danger of giving birth is very real to me. If the midwife isn't there you can pass away."

Tereza with her son, Baksoro, Southern Sudan

OF THE 8.1 MILLION CHILDREN WHO DIE BEFORE THE AGE OF FIVE, ONE IN TEN DIES DURING THEIR BIRTH AND DOES NOT EVEN LIVE TO SEE THE END OF THEIR FIRST DAY.

Within those countries women from the poorest families and those living in rural areas are much less likely to have essential midwifery services than better off women, particularly in towns and cities.

Of the 8.1 million children who die before the age of five, one in ten dies during their birth and does not even live to see the end of their first day.[10] To stop this appalling suffering the world needs more midwives and skilled birth attendants so every woman and her baby are given the care and support they need. No child is born to die.

MIDWIVES, SKILLED BIRTH ATTENDANTS AND HEALTHCARE

Midwives and skilled birth attendants play a vital role in saving the lives of mothers and babies. The International Confederation of Midwives (ICM) defines a midwife as "a person who having been regularly admitted to a midwifery educational programme, duly recognised in the country in which it is located, has successfully completed the prescribed course of studies in midwifery and has acquired the requisite qualifications to be registered and/or legally licensed to practise midwifery".[11] A skilled birth attendant is an "accredited health professional, such as a midwife, doctor or nurse, who has been… trained to proficiency in the skills needed to manage normal, uncomplicated pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns".[12]

Midwives are the only people in a health service whose education and training are dedicated to the care of pregnant women, new mothers and their newborn babies. The ideal is for every birth to be attended by a certified midwife, because in an under-staffed, over-stretched health service a health worker with a wider remit is more likely to have competing demands from other patients and less time to dedicate to mothers and newborn babies. However, the significant contribution that skilled birth attendants make to saving the lives of mothers and babies must be recognised.

Midwives and skilled birth attendants cannot operate effectively in isolation. They need the support of a functioning health system to provide the necessary equipment, medicines, supervision, and a place to refer women with complications that require a higher level of care.

THE WORLD NEEDS MORE MIDWIVES

Around 1.3 million babies could be saved each year by filling the shortage in midwives in the poorest countries. New analysis by Save the Children has shown that 38% of newborn deaths could be prevented by training and supporting midwives to provide a package of eight proven interventions (see box).

AROUND 1.3 MILLION BABIES COULD BE SAVED EACH YEAR BY FILLING THE SHORTAGE IN MIDWIVES IN THE POOREST COUNTRIES.

HOW MIDWIVES SAVE LIVES

Analysis by Save the Children shows that 38% of newborn deaths could be prevented if the following eight interventions were provided by midwives to 99% of women and newborns in the 68 countries with the highest levels of maternal and child deaths. 1.3 million newborn lives could be saved through this package (from a total of 3.3 million annual newborn deaths).

1. Intermittent preventive antimalarial treatment for pregnant women in areas with high incidence of malaria – to treat and prevent malaria, which interferes with the flow of oxygen and nutrients through the placenta to the baby
2. Syphilis detection and treatment for pregnant women – to reduce the risk of syphilis, which can lead to stillbirth, prematurity and newborn death
3. Tetanus toxoid immunisation during pregnancy – to enable mothers to pass on protection to their newborn babies, who are vulnerable to contracting tetanus when their umbilical cord is cut
4. Antibiotics for preterm, premature rupture of membranes – to reduce the risk of infection if a woman's waters break prematurely
5. Antenatal corticosteroids for preterm labour – to help premature babies' lungs mature and avoid breathing problems
6. Basic emergency obstetric care – a range of interventions to help the mother and baby survive, including anticonvulsants to prevent pregnant women fitting, antibiotics to treat infection, assisted births using forceps and/or a suction machine, drugs to make the uterus contract after birth, and manual removal of placenta
7. Immediate newborn care – to ensure babies are stimulated to breathe, kept warm and fed properly after birth
8. Neonatal resuscitation – to save the lives of babies that are not breathing when they are born.

Note: The figure of 1.3 million has been calculated using the Lives Saved tool, a modelling tool developed by a consortium of academic and international organisations, that is used to model how many deaths could be averted if the coverage of selected evidence-based interventions were increased to a given level.[13] The tool accounts for country specific demographic and epidemiologic data as well as current levels of intervention coverage to estimate lives saved. This tool has also been used to contribute to the Lancet Stillbirth series of 2011, which demonstrates that many stillbirths could be prevented with a functioning and effective health system.

THERE IS A GLOBAL SHORTAGE OF 350,000 MIDWIVES, WHICH IS PART OF A WORLDWIDE SHORTAGE OF 3.5 MILLION HEALTHCARE WORKERS.

To make further gains, the role of the wider health system in supporting the midwife is crucial. Up to two-thirds of newborn babies' lives could be saved[14] and three-quarters of maternal deaths could be prevented by comprehensive care during childbirth, including access to emergency obstetric care provided in hospitals, such as caesarean sections.[15]

TIME FOR ACTION

There is a global shortage of 350,000 midwives,[16] which is part of a worldwide shortage of 3.5 million healthcare workers. As well as the moral imperative for saving the lives of women and newborn babies, boosting the numbers of midwives would make a decisive contribution to meeting the internationally agreed Millennium Development Goals on maternal and child health (MDGs 4 and 5).

In September 2010, the UN Secretary General launched 'Every Woman, Every Child', an ambitious global women's and children's health strategy to inspire action and speed up progress on the health-related Millennium Development Goals. As part of the strategy, eight developing country governments made pledges to increase the number of midwives and skilled birth attendants, as did one donor country, Australia. In December 2010, the UK government pledged to support the global strategy by making strong commitments to save the lives of 50,000 women during pregnancy and childbirth and 250,000 newborn babies by 2015.

In September 2011, when world leaders will meet again in New York at the UN General Assembly, they will be held to account on their progress. Rich and poor country governments must use this meeting to build on the foundations of the global strategy and take steps towards meeting the urgent challenge of filling the health worker shortage. We call on them to make specific commitments and take concrete action towards recruiting, training, paying and deploying more midwives and health workers. With growing awareness and political support for maternal and child health and key opportunities for change this year, now is the crucial moment to show the world why midwives matter.

TRADITIONAL BIRTH ATTENDANTS AND COMMUNITY HEALTH WORKERS

In many countries the job of delivering babies falls to traditional birth attendants – respected, often older women in the community who help mothers to give birth. They are not certified or licensed and as a result their level of education, training and skills and the quality of care they provide can vary dramatically.

Opinion is divided over the role of the traditional birth attendant. Some traditional birth attendants use practices that can be harmful to mother and baby; for example, sitting on a woman's belly to force the baby out, using butter to attempt to turn a baby in the wrong position, or using herbs to treat infections rather than seeking medical care.[17]

A training course for community midwives in Jawzjan province, northern Afghanistan. The 18-month course, which Save the Children supports, includes extensive practice in a nearby district hospital. The session shown here is on cervical dilation.

Save the Children, through its global programmes, aims to make sure 640,000 more women have access to a trained midwife when they give birth.

As a result, countries have at various times put bans in place to prevent traditional birth attendants from practising or being trained. Others are concerned that training them diverts attention and resources from the more important task of recruiting, training and retaining midwives and skilled birth attendants.

On the other hand, many believe traditional birth attendants can be a vital link between women and the health system, giving advice, encouraging women to go to the clinic to deliver and accompanying mothers to provide moral support. Some argue that providing even basic training can bring great benefits.

Community health workers can perform a similar life-saving role in their home villages. Training community health workers to give basic advice to pregnant women, to treat some complications, and to encourage women to go to a clinic if there are problems can make a dramatic difference.

A partner of Save the Children's, Dr Abhay Bang, pioneered home-based care for newborns in Gadchiroli district in Maharashtra, India, and made a real breakthrough in saving children's lives. The Gadchiroli trial, which included training a community health worker in each village to identify high-risk babies, and how to manage problems like hypothermia and infection, reduced newborn deaths by 70% and infant deaths by 57%. This community-based solution to the problem of newborn deaths has now been replicated in sites across India.[18] In 2010, the Indian government announced it would make this model of village-level care a key part of its newborn survival strategy. It will be rolled out across 235 districts, with a combined population of 500 million people.[19]

While a qualified, fully equipped midwife at every birth is the ideal, when they are not available the option of supporting and providing basic training to traditional birth attendants and community health workers so they can spot danger signs and refer women to health facilities can make a significant difference.[20]

Dr Abhay Bang holds a newborn baby in a village in Maharashtra, India

Rukia and her nine-day-old son, Husseinat, at the Mother Kangaroo Ward in Mtwara District Hospital, Tanzania.

Rukia had been attending regular antenatal checkups in her local village health facility when she was told to go to the district hospital by a health worker because she was showing signs of being close to giving birth, even though she was only seven months pregnant. After a scan showed that she was carrying too much fluid in her abdomen, she was operated on and her son, Hussein, was delivered by caesarean section. After this she was trained in 'kangaroo care' for premature babies – to hold her son to her bare skin and wrap him up so that she maintains body contact with him. She was also given advice and support in breastfeeding, and learned important hygiene techniques, such as washing her hands and cleaning her breasts before feeding.

2 MIDWIVES **SAVE LIVES**

Giving birth without a midwife or skilled birth attendant puts women and their babies at a much higher risk of death from one of the many serious complications that can happen during childbirth. So it is vital to have someone present with the right midwifery training who can identify these complications early, as they are often unpredictable and must be dealt with or referred immediately. In rich countries where almost every birth is attended by someone with the right training, equipment and supplies, many of these complications are dealt with easily. In poor countries with a serious shortage of midwives, all too often they are fatal.

Globally, one in three pregnant women (35%) gives birth without a midwife or a skilled birth attendant. In some countries rates of unattended births are much higher. On average, in the least developed countries 59% of births have no midwife or skilled health worker present; in Ethiopia the figure is 94% of births and in Bangladesh 76%.[21] By comparison, only 1% of women in the UK give birth without a midwife or skilled birth attendant, with the most common cause being that the birth happens so fast that the woman cannot get to hospital in time.

Every woman should have expert care and support when she gives birth. But the reality of childbirth for many women means delivering their babies at home with no midwife, lying on a dirty bed or dirt floor in a house without running water, electricity or light.

If complications arise the woman may be miles away from the nearest health clinic or hospital. If there is an emergency the woman's family may have to urgently find transport and borrow money for fuel to take her to get help.

In Niger, many women live too far away from a health centre to walk there, so we've helped fund an ambulance and provided fuel for other district ambulances. Our efforts to improve women's access to better antenatal and postnatal care are bringing results. In 2008, 25,000 women attended antenatal consultations in the clinics we support, and more than 5,000 babies were delivered in the clinics by qualified health staff.

Despite having had five children, Dessie from Wogidi in South Wollo, Ethiopia, has never given birth at a health centre. "So far, all my children have been born at home with my mother-in-law's help," she says. "A blade for cutting the cord, clean cloths and her bare hands – that's all she used to deliver my children. We buy the blade in the market. We just check if it's properly packed to be sure it hasn't been used before."

The district hospital is a four-hour drive away from Wogidi so many women are unable to get there in time if there are complications. Save the Children has built a new maternity ward at the local health centre there with rooms for consultation, delivery and recovery.

The government of Ethiopia has been investing in building and upgrading health centres and has progressive policies on the practice of midwives in place to allow them to carry out a wide range of services. In its new Health Sector Development Programme launched last year, the Ethiopian government committed to training thousands more midwives and set an ambitious target to increase the number of births with a skilled attendant to 62% by 2015, but estimated that a £280 million funding gap must be filled if it is to meet the health-related MDGs.

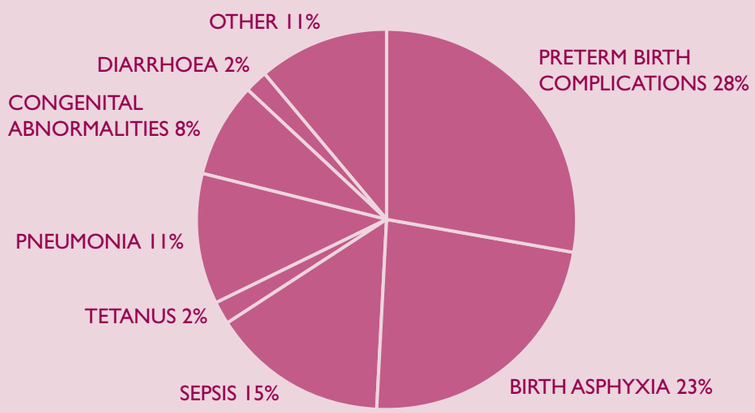
WHAT DO NEWBORN BABIES DIE FROM?

The three biggest killers of newborn babies in the first month are: complications arising from prematurity, eg, breathing difficulties due to under-developed lungs, or feeding difficulties due to an under-developed digestive system (28%); asphyxia, when a baby is deprived of oxygen during delivery and is more likely to need resuscitation when it is born (23%); and sepsis, an infection of the blood (15%).[22]

ASPHYXIA AND SEPSIS

Birth asphyxia is responsible for more deaths than the number of children under five who die from malaria.[23] Asphyxia causes 814,000 newborn deaths, which could largely be prevented by midwives and skilled birth attendants. With the right training and equipment, midwives are able to monitor the unborn baby's heart rate and can detect signs of distress in a baby during birth. They are able to assess whether the baby is at greater risk of asphyxia, for example, if it is small and underweight or if it is premature. They can predict which babies are more likely to need resuscitation when they are delivered and know how to help a newborn who is not breathing. They know when to refer a woman or baby to a higher level of care at a clinic or hospital.

WHAT DO NEWBORN BABIES DIE FROM?



A cloth used in the delivery of a baby in rural Ethiopia.

A razor blade is the only tool Habsatu, a traditional midwife in northern Nigeria, uses to deliver babies.

Herbs used to treat infection in newborn babies by Hadiza, a traditional midwife in northern Nigeria.

SOME OF THE WAYS OF PREVENTING ASPHYXIA ARE EXTREMELY SIMPLE.

Some of the ways of preventing asphyxia are extremely simple. It is estimated that 42,000 lives a year could be saved simply by having someone present who knows to dry the baby and stimulate it to breathe by rubbing its back or feet.[24]

During a normal delivery, the presence of a well-trained midwife or birth attendant can prevent many cases of infection, including neonatal sepsis, which kills 521,000 newborns a year.[25] Clean delivery practices – for example, hand-washing and using sterile equipment to cut and tie the cord – can help prevent infection. The immediate care of the newborn – ensuring skin-to-skin contact with the mother and encouraging breastfeeding – is also important.

In Mvolo, Southern Sudan, the distances from women's homes to clinic and the lack of transport often prevent women from coming to a health centre. Many women will give birth at home with a traditional birth attendant. The trained midwife at the Save the Children-supported clinic in Mvolo gives women a safe delivery kit to use at home. The kit contains a pair of gloves, two ties for the umbilical cord, a razor blade, two pieces of gauze to clean the baby's face, a bar of soap and a plastic sheet to protect the mother from infection.

In richer countries deaths from asphyxia and sepsis are very rare. In the UK in 2008, 306 babies died from asphyxia and 39 died as a result of neonatal sepsis, from a total of 743,000 births. By comparison, in Burkina Faso there were 721,000 babies born in 2008, similar to the UK's total births, but 5,874 babies died from asphyxia and 3,109 babies died from tetanus. In Nepal, out of 732,000 births, 6,591 babies died from asphyxia and 5,304 died from sepsis.[26]

Save the Children is leading the way in research about what works best to save the lives of babies in their first month of life. The groundbreaking Saving Newborn Lives programme, launched in 2000 with a grant from the Bill & Melinda Gates Foundation, has identified better care practices and improved interventions to save newborn babies. The initiative helps ensure access to midwives, treatment of infections, tetanus immunisations for pregnant women, and education for pregnant women about the importance of proper hygiene, warmth, and breastfeeding. The benefits of these efforts have reached more than 30 million women and babies in 18 countries and are now being extended to mothers in other countries, ensuring that more babies receive the care they need, especially during the critical first week of life.

EMERGENCY OBSTETRIC CARE

Some of the interventions that can save babies' and mothers' lives are relatively simple and can be delivered by a midwife working in the community or visiting mothers in their homes. However, to have the most impact, midwives need the support of a health centre and to be able to refer the most serious complications to a hospital.

TO HAVE THE MOST IMPACT, MIDWIVES NEED THE SUPPORT OF A HEALTH CENTRE AND TO BE ABLE TO REFER THE MOST SERIOUS COMPLICATIONS TO A HOSPITAL.

A midwife or skilled birth attendant with the correct training, medicines and equipment can provide basic emergency obstetric care in a health centre, including administering antibiotics and anticonvulsants, assisted deliveries and manual removal of the placenta. The higher level of care, for more serious complications in childbirth – known as comprehensive emergency obstetric care – cannot be performed by a midwife alone. Births requiring caesarean section or blood transfusion must be carried out in a hospital, and need the assistance of other health staff in addition to a midwife, including a surgeon to perform the operation and a laboratory technician to match blood. Referring a woman in danger to a hospital often depends on having access to a telephone to call for help or transport to go to the clinic or hospital.

Emergency obstetric care requires a functioning health system. In many developing countries providing this kind of care is a huge challenge. In the least developed countries only 35% of women give birth in a clinic or hospital, and only 3% of women deliver by caesarean section, whereas in countries with adequate coverage of emergency obstetric care the rate of women having caesareans is expected to be 5–15%.[27] The prerequisite of a functioning health system in order to deliver emergency obstetric care explains why maternal and newborn deaths are falling at a slower rate than deaths of children under five. This underlines the need for strengthening health systems and essential midwifery services so that the diagnostic skills midwives have are matched with the infrastructure to deliver the interventions they would choose to prescribe.

ANTENATAL AND POSTNATAL CARE

A well trained, highly skilled midwife does much more than deliver babies. A midwife working at the heart of the community and within a functioning health service is able to visit women to give care, advice and support – before, during and after pregnancy. Many countries have invested in bicycles or motorbikes for midwives, enabling them to travel to remote communities more easily and to provide more frequent visits and support to more pregnant women.

Antenatal care by midwives can identify problems and prevent some complications, and means cases are referred where necessary. Midwives check the woman's blood pressure, look for signs of aneamia and give iron tablets, immunise women against tetanus, and identify signs of pre-eclampsia. The midwife can spot high risk pregnancies – for example, if it is a multiple pregnancy, if the baby is very small or very large, or if the baby is not in a good position for delivery. A midwife can provide information and advice to women about nutrition and breastfeeding, and teach them to spot danger signs themselves. A key part of antenatal care is advising women when to go to the health centre to deliver their baby.

In Sierra Leone, Save the Children runs antenatal classes – known as 'belly woman' support groups – and emergency referral clubs, in partnership with government-employed maternal and child health aides. These antenatal groups help women prepare for childbirth,

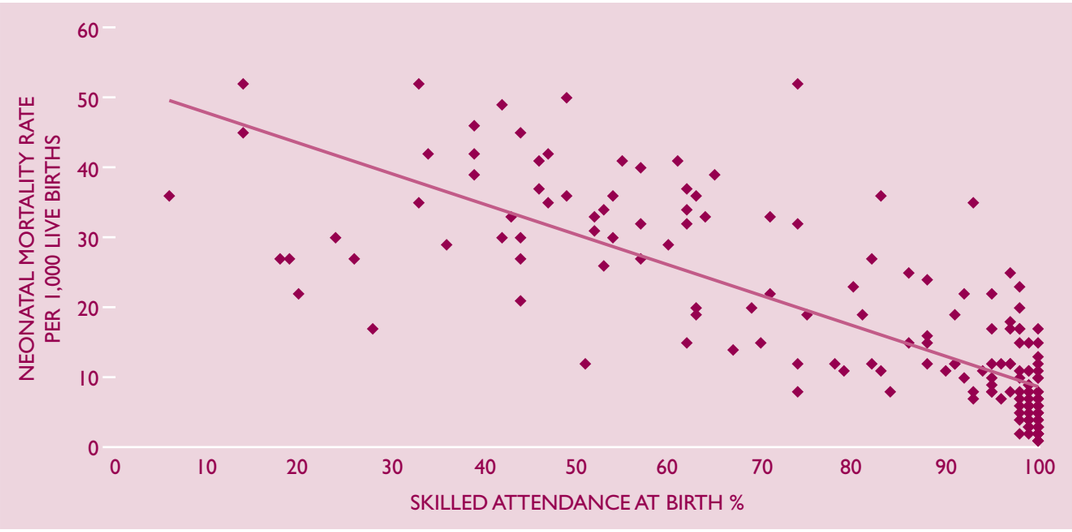
put women in contact with skilled birth attendants, and offer advice on nutrition. In a country where many traditional beliefs surrounding pregnancy still pervade – such as the belief that a pregnant woman should not eat eggs, thereby denying her an important source of protein – this kind of antenatal support is vital.

After the birth a midwife can help a new mother to feed and care for her newborn baby, and show her how to keep the baby safe and warm, and to avoid infection. Postnatal care also involves checking for signs of infection in the mother and that she is recovering well after birth.

SKILLED BIRTH ATTENDANTS AND NEWBORN DEATHS

In rich countries, having a skilled health professional present during childbirth is routine, and the rates of newborn death are very low. The opposite is true in many developing countries. As the chart below shows, there is a correlation between the percentage of births that are attended by a skilled birth attendant and the number of babies who die in their first month of life. At the right hand side of the graph there is a cluster of 41 developed countries and transition economies where 100% of births were attended by a skilled person. In most of these countries – 24 of them – the chance of a baby dying in the first month is 1 in 200 or lower.[28] This also reflects that richer countries will have stronger health systems, a greater number of health trained professionals and better provision of emergency obstetric care in health facilities.

HIGHER LEVELS OF ATTENDED BIRTH GO HAND IN HAND WITH LOWER NEONATAL MORTALITY RATES



COUNTRIES WITH THE WORST NEWBORN MORTALITY RATES[29]

	Country	Neonatal mortality rate, per 1,000 births (2009)	Percentage of births attended (2005–2009)
1	Afghanistan	52	14
2	Democratic Republic of Congo	52	74
3	Somalia	52	33
4	Mali	50	49
5	Sierra Leone	49	42
6	Guinea-Bissau	46	39
7	Central African Republic	45	44
8	Chad	45	14
9	Angola	42	47
10	Burundi	42	34

THE TEN WORST PLACES FOR BIRTH ATTENDANCE[30]

	Country	Percentage of births attended (2005–2009)	Neonatal mortality rate, per 1,000 births (2009)
1	Ethiopia	6	36
2	Afghanistan	14	52
3	Chad	14	45
4	Timor-Leste	18	27
5	Nepal	19	27
6	Lao People's Democratic Republic	20	22
7	Bangladesh	24	30
8	Haiti	26	27
9	Eritrea	28	17
10	Somalia	33	52

EVERY DAY MORE THAN 3,000 WOMEN IN NIGERIA GIVE BIRTH COMPLETELY ALONE.

GIVING BIRTH ALONE

In some countries the number of women giving birth alone, without even a relative present, let alone a midwife, is extremely high. In the 40 countries for which data is available an estimated 2.4 million women gave birth completely alone. As a result of cultural practices – such as the need to ask permission of a male relative to go out of the house – and religious beliefs, many women are not able to leave their homes to seek assistance when they go into labour. Even when a health worker is available, some women are reluctant to be seen if the health worker is a man.

The starkest example is Nigeria, where around one in five women deliver their babies alone – and this varies from 34.5% of the poorest fifth of women to 3% of the richest fifth.[31] Six million babies are born every year in Nigeria,[32] meaning every day 3,100 women in Nigeria face some of the most dangerous moments of their lives on their own. A third of women in Nigeria said that one of their reasons for not going to a health facility was because their husbands said it was unnecessary.[33] This highlights the need to make sure that efforts to tackle maternal and newborn deaths, particularly education campaigns, involve men.[34]

THE TEN LONELIEST PLACES TO GIVE BIRTH

Country (year)	Percentage of women giving birth alone[35]
Nigeria (2008)	18.6%
Niger (2006)	16.9%
Mali (2006)	13.1%
Rwanda (2007–08)	11.1%
Guinea (2005)	9.0%
Uganda (2006)	8.9%
Angola (2006–07)	8.4%
Kenya (2008–09)	6.5%
Nepal (2006)	6.3%
Ethiopia (2005)	5.4%

Aisha, from Katsina, northern Nigeria, gave birth at home without a midwife or a birth attendant. "A neighbour helped me to cut the cord with her hands and a new razor blade," she says. Two days after the birth, her baby, Maymuna, became very ill and couldn't breathe properly. Aisha brought her to the hospital in Katsina where Maymuna was diagnosed with meningitis and other infections, possibly contracted when her umbilical cord was cut at home with a razor blade. After three days of treatment with antibiotics, Maymuna started to recover.

3 THE MIDWIFE SHORTAGE

The 350,000 shortage of midwives[36] is part of a worldwide shortage of 3.5 million health workers.[37] Many of the factors that lead to a shortage of midwives are the same factors that contribute to a general health worker shortage in the poorest countries. Yet there are also reasons for the midwife shortage that are specific to that profession. Both these sets of reasons are explored in more detail below.

THE HEALTH WORKER SHORTAGE

The health workforce is the backbone of a health system. Without doctors, nurses, midwives and community health workers, diseases cannot be diagnosed, drugs cannot be prescribed, children cannot be vaccinated, and women and babies cannot be protected during birth. The shortage of health workers is therefore a truly global crisis and one of the biggest challenges in global development today.

The minimum number of doctors, nurses and midwives needed to deliver essential health services is 2.3 per 1,000, or one health worker for every 435 people. There are 61 countries with a critical shortage of healthcare workers – 41 of them in Africa. Niger only has one health worker for every 6,000 people, Sierra Leone has one for every 5,000.[38] By comparison, in the UK there is one health worker for every 119 people.[39] A billion people will never see a health worker.[40]

Action for Global Health outlined five causes of the health workforce crisis:[41]

1. Difficult working conditions – many health workers lack incentives. They are poorly and irregularly paid, and the shortage of staff means those who are working will have a high caseload. Many health facilities lack the basic equipment and medicines to enable them to function properly.
2. Disparities in health coverage – urbanisation has led many health workers away from rural areas in search of better working conditions and better opportunities for their families.
3. Migration of health professionals – skilled health workers may migrate in order to use their skills in rich countries where they will be better paid and better supported. In some countries, including the UK, the health service has become dependent on foreign health workers.
4. Lack of education and training opportunities – many countries lack educational facilities and educators to train enough health workers to cover the whole population, particularly in rural areas. Africa trains 5,100 doctors a year compared to 173,800 in Europe.[42]
5. Chronic under-investment in human resources – donor agencies and global health initiatives have often favoured more short-term targeted investments, such as distributing bed-nets or disease-specific vaccination drives, at the expense of longer-term commitments that would enable countries to boost the number of health workers. Many governments in poorer countries have also failed to dedicate enough of their own resources to health budgets and to health workers, with many countries lacking national human resources policies and plans.

HEALTH MIGRATION AND THE UK

In the late 1990s, the UK's national health service (NHS) used international recruitment to rapidly boost its workforce in response to a shortage of skilled staff.

The UK was the first nation to produce international recruitment guidance to protect the health workforce of developing countries. A key component of the 2004 Department of Health Code of Practice for the international recruitment of healthcare professionals was to preclude the active recruitment of healthcare professionals from developing countries.[43]

In June 2010, the International Development Secretary Andrew Mitchell launched a £5m health partnership scheme to help midwives and health workers from the UK share their skills with birth attendants, nurses and doctors in the world's poorest countries. The scheme aims to expand links between the NHS and overseas health systems, and share innovations in health technology in order that the UK can repay some of the debt to poor countries for all the trained doctors, nurses and midwives that have migrated to work in the UK. While UK training institutions can definitely help, the long-term solution is to ensure that permanent staff in poor countries are trained and supported to do their work, and that they receive decent wages.

THE MIDWIFE SHORTAGE

The World Health Organization recommends one midwife or skilled birth attendant for every 175 pregnant women[44] but this standard is far from being achieved. In Rwanda, where 400,000 babies are born in a year, there are 46 public midwives.[45] Uganda has 15,000 trained midwives with an estimated 1.5 million women having babies each year.[46]

Some of the reasons for the shortage of midwives mirror those listed above. A woman wishing to become a midwife faces the prospect of working in a poorly staffed, poorly

THERE IS A GLOBAL SHORTAGE OF 350,000 MIDWIVES.

equipped health centre in a remote or even dangerous location with a huge caseload of pregnant women to look after. She may have little support or opportunity for training and may be paid relatively poorly. A midwife in Liberia is paid around £62 a month,[47] in Burkina Faso a midwife can expect around £125 a month, and in Nigeria around £300 a month.[48]

"I don't have a stethoscope and my blood pressure machine doesn't work properly. I don't have a tape measure to measure the growth of the foetus in the womb – this equipment is very important for antenatal care. I'm supposed to do a urine test but I don't have any urine sticks.

"If there were two of us working here, one could work during the day and one at night, but because I'm the only one I work all day. The nightwatchman calls me if a woman goes into labour at night. As soon as labour starts I'm there. If a mother is bleeding after the delivery I keep her in for 24 hours. I stay with her during the night so I can monitor her."

Eva, a midwife in Southern Sudan

Personal safety is a particular concern for midwives and other female health workers, in addition to poor working conditions. The International Labour Organization has noted the high risk of violence among midwives and nurses. Health facilities are often staffed by a single female health worker, which puts her in a vulnerable position and makes it impossible for that health post to provide the necessary 24-hour coverage for obstetric emergencies and complications in labour.[49]

Poor working conditions, particularly those in rural settings, drive midwives to take their skills elsewhere. Within countries, midwives tend to be concentrated in urban centres, where the better resourced health facilities are based but which are further away from the women and children who are most in need. In Sierra Leone, two-thirds of urban women said they had a midwife, doctor or health professional present when they gave birth, compared with only one-third of rural women.[50] Many midwives also migrate overseas to seek a better standard of living.

There is a shortage of opportunities for training in midwifery in the least developed countries. An additional challenge for midwifery, a traditionally female profession, is that in many countries fewer girls complete schooling than boys, so fewer women grow up with the necessary basic education. Increased investment in girls' education is essential to enlarge the pool of young women who are qualified to potentially start training as midwives.

Madame Achatou Boukar is a midwife who works at a maternity centre in the Matameye district of Niger. This government-funded maternity centre is grossly under-equipped and lacks basic amenities such as electricity and running water.

"With electricity, we would be able to sterilise our instruments properly and apply other techniques, but right now we cannot do any of this. Also we need more personnel. There are many patients here and there are only three of us.

We need proper equipment, and the buildings are not in good shape. We don't have enough beds. Women who have just given birth have to share the same space with sick patients. We don't have enough beds for the early stages of labour, so they end up laying on the ground."

4 FILLING THE GAPS

THE FUNDING GAP

Underlying the shortage of midwives and other health workers is a lack of money available in poor countries' health budgets to pay for recruitment, training and salaries. Personnel often account for the bulk of health spending, and in many countries health workers account for a large proportion of the public sector workforce.

The cost of filling the global health worker gap of 3.5 million doctors, nurses, midwives and community health workers in 49 of the poorest countries by 2015 has been estimated at between £25 billion[51] and £34 billion.[52]

The money to pay for these additional health workers needs to come from a number of sources. First, governments in the poorest countries must increase their own spending on their health budgets. Existing efforts are inadequate. African governments committed to the target of spending 15% of revenues on health at the African Union summit in Abuja, Nigeria in 2001, but by 2008 just six had met this target – Rwanda, Botswana, Niger, Malawi, Zambia and Burkina Faso.[53]

Second, a change in the way international donors and rich country governments give money to improve health in poor countries could boost the number of health workers. Aid for health tends to be short-term, unpredictable and fragmented. However, governments in developing countries need a long-term guarantee in order to invest in recruiting and training new health workers, which can take many years, and to pay their salaries.

Third, the policies of international institutions must change. When the International Monetary Fund (IMF) lends money to a country it often includes a requirement that the country will keep inflation low and minimise the government deficit by restricting public spending, which includes the public sector wage bill. The rationale behind this is to achieve economic stability, but it can also have the effect of preventing countries from increasing the numbers of midwives and other health workers on the public payroll. A more flexible approach by the IMF that gives these countries more scope to expand the wage bill and employ health workers is needed to enable the poorest countries to fill their health worker gaps.[54]

Recruiting, training and retaining more midwives is vital to saving children's lives, as is ensuring that existing midwives are in the right places within countries. Donors and governments must work together in developing countries to support places with a large shortage of midwives by reducing the 'push' factors like poor pay and conditions, and by improving training and addressing the unequal distribution of midwives.

At the same time, richer countries should work on minimising 'pull' factors by stopping the active recruitment of health workers from countries with critical shortages, and adhering to the WHO Global Code of Practice on the International Recruitment of Health Personnel. This was adopted by the World Health Assembly in May 2010, which sets out principles and practices of ethical recruitment.[55]

Although there has been progress globally in increasing the number of births with a skilled attendant – 65% of all births were attended in 2009,[56] compared with 56% in 2000[57] – this progress has been insufficient to meet MDGs 4 and 5. However, many of the poorest countries are successfully boosting the numbers of midwives and ensuring that more births are attended. Pakistan, Burkina Faso and Rwanda have increased the proportion of births attended by a skilled person by 20 percentage points in the period from 2000 to 2008. Although these countries are yet to reach the global average, they have pulled themselves up from the bottom of the rankings. Ten other countries have also shown improvements of more than ten percentage points since 1990.[58] The big challenge for these countries is to also tackle inequality – ensuring that midwives and skilled birth attendants are reaching the poorest, most vulnerable and most remote women and children, and not just those that are easiest to reach. Through its global programme work, Save the Children is contributing to the efforts of the poorest countries, by aiming to make sure that 640,000 more women have access to trained midwives when they give birth, and that they get the postnatal care they need.

SOME OF THE POOREST COUNTRIES ARE SUCCESSFULLY BOOSTING THE NUMBER OF MIDWIVES.

Momal, a health worker in rural Pakistan, carrying her basic healthcare kit on a visit to an expectant mother. She has been trained to advise and treat pregnant women and newborn babies.

PAKISTAN – MAKING PROGRESS, FACING CHALLENGES

Pakistan increased the proportion of births with a skilled attendant present from 18% in 1999 to 39% in 2007. The number of children dying before the age of five dropped from 112 per 1,000 births to 90 in the same period. The country's progress has been due in a large part to national initiatives to recruit and train midwives, female health visitors and skilled birth attendants to work in the community.

One such project was the Pakistan Initiative for Mothers and Newborns, which was launched in 2004. Over six years the US-funded project trained more than 10,000 health workers, 80% of whom were women; donated life-saving ambulances for emergency obstetric care; and established 24-hour service in health facilities. The scheme provided services to nearly 3 million families and half a million newborn children.[59]

More recently the government of Pakistan's new Maternal, Newborn and Child Health programme has been supported by international donors, including the UK's Department for International Development (DFID), which committed £91 million between 2008 and 2013. DFID has supported the building of community midwifery schools to train 12,000 midwives.[60]

Healthcare in Pakistan is distributed unequally, meaning that a mother and her newborn's chances of survival depend on where in the country she was born and whether she is rich or poor. The newborn mortality rate in Punjab is nearly twice that in Balochistan.[61] Tackling these inequalities must be Pakistan's foremost priority.

INDONESIA – A MIDWIFE IN EVERY VILLAGE[62]

The number of women who die in childbirth has more than halved in Indonesia over the last two years, largely as a result of the government's investment in the 'midwife in every village' programme. In 1989, as many as 19,500 women died as a result of complications during pregnancy or childbirth; now, that number is 9,600. Over seven years, Indonesia selected, trained and certified 54,000 new village midwives, bringing its total number of midwives to approximately 80,000.

The midwives provide outreach and reproductive health services, immunisations and information about proper nutrition. Many of them have a small birthing room at their home or clinic.

To keep the newly trained midwives motivated, the programme includes a feedback mechanism and the government has adapted its strategy in response by modifying the training curriculum and improving the referral system for emergency obstetric care.

Between 1991 and 2007, the percentage of Indonesian births attended by skilled personnel more than doubled, from 32% to 79%. Indonesia also lowered both its maternal and newborn mortality rates by more than 40% – from 390 maternal deaths per 100,000 live births in 1989 to an estimated 228 in 2007, and from 32 newborn deaths per 1,000 live births to 19 during the same period.[63]

Source: *Women on the Front Lines of Health Care: State of the world's mothers 2010*, Save the Children

A mother gets advice from a community healthcare volunteer and a midwife in Aceh, Indonesia.

Training is a key issue. In the UK if you want to be a midwife, you can first train as a nurse and then do an additional year and a half in midwifery, or you can train directly as a midwife. In many countries in the developing world with acute shortages of midwives, the direct entry choice does not exist. This means training takes longer and midwives who are also qualified nurses can be diverted to perform other tasks. If someone is trained solely as a midwife, all their work is focused on the mother and her baby. Allowing midwives to train directly can be viewed as a more efficient use of training budgets.

A trainee midwife practising on a model as part of her course in Jawzjan province, Afghanistan.

AFGHANISTAN – MIDWIFE TRAINING COLLEGES

Afghanistan is one of the riskiest places for mothers and babies, with maternal and child mortality rates among the highest in the world. Afghan women face a one in 11 lifetime risk of maternal mortality, and one child in five dies before reaching the age of five.

Since 2002, the number of midwifery schools in Afghanistan has increased from 6 to 31 after the Ministry of Public Health launched a programme to rapidly train and deploy midwives to rural areas. About 2,400 midwives have been trained and are now employed by the government and NGOs across the country, most of them in service in their own villages and communities. An additional 300 to 400 midwives are being trained each year.

The percentage of women in rural Afghanistan whose deliveries were attended by skilled personnel increased from 6% to 19% between 2003 and 2006.

Save the Children is running a midwife college in Shiberghan, Jawzjan province in northern Afghanistan. The 18-month course gives women both theoretical and practical training, as well as extensive practice in a nearby district hospital. All the women on the course come from different villages and are required to go back to their villages to work as midwives after graduation.

Madeena graduated from the midwifery college in October 2009 and is now working in a remote community of Jawzjan, near the border with Turkmenistan. One night when she was on duty, a 40-year-old woman came to the clinic who had been bleeding heavily for several hours after giving birth. The woman's placenta had not detached completely during birth. Madeena was able to safely remove the placenta, stop the bleeding and save the new mother's life.

Source: *Women on the Front Lines of Health Care: State of the world's mothers 2010*, Save the Children

Encouraging an even distribution of midwives throughout a country is essential to make sure that the poorest, most vulnerable women and children have the support they need. The trend in most countries is that women in urban areas are much more likely to have expert support when they give birth. In 2004, Côte d'Ivoire had 2,100 midwives. Yet only 300 of them worked outside of the cities, despite the fact that half of the population live in rural areas.[64]

NIGERIA'S MIDWIVES SERVICE SCHEME – ENCOURAGING EQUAL DISTRIBUTION

To overcome the challenge of staffing primary healthcare facilities in remote rural areas, where communities have the highest risk of maternal, newborn and child death, the federal government of Nigeria launched the Midwives Service Scheme.

The initiative involves deploying newly qualified, unemployed and retired midwives to health facilities in rural communities. One year's service in a rural setting is mandatory for newly graduated basic midwives before being fully licensed to practise midwifery in Nigeria. More than 2,600 midwives have been deployed to 652 health facilities across the country, many in rural communities. The project includes plans for improving supplies and equipment, by giving each midwife a 'mama kit' containing a personal health record book and a clean and safe delivery kit. Designed initially to provide a short-term solution, the scheme has already been extended from two to three years due to its success.[65]

The programme reaches a population of more than 10.7 million people, roughly 7% of the total population.[66] In a follow-up focus group with midwives who took part in the scheme more than half indicated that they would be happy to continue working in their rural facility even after the scheme has ended.[67]

Save the Children is working in Nigeria as part of the Partnership for Reviving Routine Immunization in Northern Nigeria, Maternal Newborn and Child Health Initiative, which aims to improve the quality and availability of maternal, newborn and child health facilities in three northern states of Yobe, Katsina and Zamfara.

A nurse cuts the umbilical cord of a newborn baby at the labour ward in the medical centre in Katsina, northern Nigeria.

What all these solutions have in common is that they take political will and a sensible human resources strategy with long-term vision, backed by reliable investment. The projects must put the midwives' well-being and job satisfaction at the heart of the project. These examples show that increasing the number of midwives in the world needs focused investment from the local level right up to national policy.

5 CONCLUSION AND RECOMMENDATIONS

GLOBAL SUPPORT, GLOBAL OPPORTUNITIES

The world needs more midwives and skilled birth attendants. Without them women, and newborn babies will continue to die needlessly from complications in birth that can be easily prevented by someone with the right skills.

We know the reasons for the shortage of midwives and we know what can be done to address it. There is a moral imperative to put more of those solutions to work in more places and save the lives of more women and children. Unless more midwives are recruited, trained and supported, the Millennium Development Goals to reduce child deaths by two-thirds (MDG 4) and maternal mortality by three-quarters (MDG 5) cannot be met.

Rich and poor countries have already shown their support for boosting the number of midwives. When the UN launched the Every Woman, Every Child strategy to accelerate progress towards the maternal and child health goals, several countries supported it with pledges that specifically referred to midwives. Ethiopia committed to increase the number of midwives from 2,050 to 8,635, and Rwanda has pledged to train five times more midwives. For its part, the UK government has said it will support at least 2 million safe deliveries and save the lives of 50,000 women during pregnancy and childbirth, and the lives of 250,000 newborn babies by 2015.[68]

These commitments must become a foundation for concrete action to boost the numbers of midwives and to inspire further urgently needed commitments from other governments and donors. When world leaders and donors come together again at the UN General Assembly in September 2011, it will be the ideal moment for high-level recognition of the central role that midwives and other health workers play in saving the lives of mothers and children. Rich and poor countries must work together to close the health worker gap, and we will be campaigning for key governments to make specific commitments on the recruitment and training of midwives and health workers.

In June 2010, David Cameron wrote that the last time Conservatives and Liberals were in government together maternal mortality in Britain was a "great blot on public health". They responded with new policies and resources and established a national midwifery service in 1936 that led to an 80% reduction in maternal mortality in 15 years.[69] In the words of David Cameron: "It's now time to take a similarly radical approach abroad" – the lives of women and their babies in childbirth can be saved by concerted efforts to recruit and train midwives and provide them with the support they need.

Mothers will always remember the vital role that their midwife played when they gave birth. The care a midwife provides during some of the most frightening moments of a woman's life is not only reassuring – it can make the difference between life and death for the mother and her newborn baby. It is time to invest in midwives so every newborn baby survives to live a healthy, productive life and every mother can live to see her children fulfil their potential.

RECOMMENDATIONS

Save the Children is calling on governments to:

Support countries to recruit more midwives and health workers – Donor governments, especially those in the EU and G8/20, should put health workers at the heart of their ongoing development work. Every country with a critical health worker shortage should be supported to develop and implement an effective human resources plan to ensure more midwives, nurses, doctors and community health workers are recruited, trained, equipped, paid, supported and deployed to serve the poorest and most marginalised communities.

Ask the UN Secretary-General to host a health worker event at the UN General Assembly – As part of delivering on the UN Secretary-General's Every Woman, Every Child strategy, governments should call for a high-level political event in September 2011 where heads of state come together to make specific commitments to fill the 3.5 million health worker gap.

Make the International Monetary Fund support flexibility on public sector spending – Despite claims of flexibility, the International Monetary Fund is still discouraging public spending in countries with health worker shortages. All governments with seats on the IMF board must push for flexible economic policies for poor countries so they can expand their health workforce.

Respect the international recruitment code of practice – Donor governments must not actively recruit health workers from countries with critical health worker shortages. All governments must adhere to the World Health Organization Global Code of Practice on the International Recruitment of Health Personnel adopted in 2010, and support depleted countries to rebuild their health workforces.

NOTES

[1] Lawn, J E et al (2009) 'Reducing intrapartum-related deaths and disability: can the health system deliver?', *International Journal of Gynecology and Obstetrics*, 107, p. S128

[2] Unicef, *The State of the World's Children 2011*. 35% of 136,712,000 births were not attended by someone with midwifery skills.

[3] Estimated from DHS data from 40 countries for which data on assistance during delivery was available (MeasureDHS data was accessed 7 March 2011). The estimate was obtained by comparing the percentage of women who reported 'no one' in this category for births in three years preceding the survey, with the most recent total births figures from Unicef, *The State of the World's Children 2011*.

[4] International Confederation of Midwives, News Release: '350,000 more midwives needed to reduce unnecessary deaths and injury in childbirth', 30 April 2010 www.internationalmidwives.org/Portals/5/2010/IDM%202010%20News%20Release%20-%205%20May%202010.pdf

[5] See note 2.

[6] Trends in Maternal Mortality: 1990 to 2008. Estimates developed by WHO, UNICEF, UNFPA and The World Bank, www.who.int/reproductivehealth/publications/monitoring/9789241500265/en/index.html

[7] Black, R E et al (2010), 'Global, regional and national causes of child mortality in 2008: a systemic analysis', *The Lancet*, vol 375, issue 9730, p 1969–87

[8] Lawn, J E, Shibuya K and Stein C, 'No cry at birth: global estimates of intrapartum stillbirths and intrapartum-related neonatal deaths', *Bulletin of the World Health Organization*, vol 83, number 6, June 2005, p 409–17

[9] Levels and Trends in Child Mortality 2010. Estimate developed by the UN inter-agency group for child mortality estimation – 41% of 8.1 million.

[10] Black R E et al, see note 7; Levels and Trends in Child Mortality 2010. Estimated developed by the UN inter-agency group for child mortality estimation (9%)

[11] International Confederation of midwives, 'The definition of a midwife', 19 July, 2005

[12] 'Making pregnancy safer: the critical role of the skilled attendant', joint statement by WHO, ICM and FIGO. Geneva, World Health Organization, 2004 www.who.int/making_pregnancy_safer/topics/skilled_birth/en/index.html

[13] The Lives Saved Tool: www.jhsph.edu/dept/ih/IIP/list/index.html

[14] Darmstadt, G et al (2005), 'Evidence-based, cost-effective interventions: how many newborn babies can we save?', *The Lancet*, vol 365, p 977–88.

[15] Obaid T A (2007) 'No woman should die giving life', *The Lancet*, Volume 370, Issue 9595, 13 October 2007, p 1287–88, doi:10.1016/S0140-6736(07)61550-5

[16] see note 4.

[17] These examples come from interviews carried out by Save the Children with health workers in Liberia and Sierra Leone, and a traditional birth attendant in Nigeria.

[18] Healthy Newborn Network, 'Dr Abhay Bang reflects on the importance of Community Health Workers', http://www.healthynewbornnetwork.org/press-release/dr-abhay-bang-reflects-importance-community-health-workers

[19] In 2007 the Cochrane Review looked at how training traditional birth attendants (TBAs) improved health behaviours and pregnancy outcomes. They looked at four studies, involving more than 2,000 TBAs and nearly 27,000 women. One cluster-randomised trial found significantly lower rates in the intervention group regarding stillbirths, perinatal death rate and neonatal death rate. The trial in Pakistan found a significant effect of TBA training on perinatal mortality, with a 30% reduction. Sibley L M, Sipe T A, Brown C M, Diallo M M, McNatt K and Habarta N. Traditional birth attendant training for improving health behaviours and pregnancy outcomes. Cochrane Database of Systematic Reviews 2007, issue 3, article no. CD005460. DOI: 10.1002/14651858.CD005460.pub2. http://apps.who.int/rhl/pregnancy_childbirth/antenatal_care/general/cd005460/en/index.htm

[20] Healthy Newborn Network, 'Changing perceptions to save newborns' lives', 23 September 2010, http://www.healthynewbornnetwork.org/press-release/changing-perceptions-saves-newborns%E2%80%99-lives

[21] Unicef, *The State of the World's Children 2011*, p 116–19.

[22] Black, R E, et al (2010) – see note 7.

[23] Wall, S N, et al. 'Reducing intrapartum-related neonatal deaths in low and middle-income countries – what works?' *Seminars in Perinatalogy* 34:396.

[24] Lawn, J E et al (2009) – see note 1.

[25] Black, R E, et al (2010) – see note 7.

[26] The numbers of deaths are from Black R E et al – see note 7. Numbers of births are from Unicef, *The State of the World's Children 2010*.

[27] Unicef (2011), *State of the World's Children 2011*

[28] World Health Organisation World Health Statistics 2010. www.who.int/gho/database/WHS2010_Part2.xls

[29] Unicef (2011), *The State of the World's Children 2011*

[30] Unicef (2011), *The State of the World's Children 2011*

[31] Nigeria Standard DHS 2008, p9–134 http://www.measuredhs.com/pubs/pdf/FR222/FR222.pdf

[32] Unicef, *The State of the World's Children Special Edition, 2009*, statistical tables, p10

[33] Federal Republic of Nigeria Ministry of Health (2011). *Saving Newborn Lives in Nigeria*

[34] UNFPA, 'It takes two: men as partners in maternal health', http://www.unfpa.org/public/global/pid/84

[35] MeasureDHS data, accessed 18 February 2011 – see note 3.

[36] International Confederation of Midwives, News Release

[37] World Health Organization, *Global Health Atlas*, http://apps.who.int/globalatlas/

[38] Save the Children (2011), *No Child Born to Die*, p17

[39] The Guardian, 'Which countries are faced with a 'critical' health worker shortage?', http://www.guardian.co.uk/global-health-workers/interactive/infographic-mortatlity-rates-health-workers-uk-us-worlld

[40] Global Health Worker Alliance. animation on health worker Flo, accessed on 23 February www.youtube.com/watch?v=tCSmIYmPOi4

[41] Action for Global Health (2010) *Health Workers Urgently Needed to Reach the Health MDGs*

[42] Action for Global Health (2010) *Health Workers Urgently Needed to Reach the Health MDGs*

[43] Department of Health, Code of practice for the international recruitment of healthcare professionals, December 2004, www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4097734.pdf

[44] Unicef, *The State of the World's Children 2009*, p60

[45] Republic of Rwanda Ministry of Health, WHO country cooperation strategy, Rwanda 2009–2013, p21

[46] Guardian, 'Should Uganda ban traditional birth attendants?', www.guardian.co.uk/katine/katine-chronicles-blog/2010/mar/30/traditional-birth-attendants-ban; birth rates from Unicef, *State of the World's Children*

[47] http://www.bbc.co.uk/tv/features/toughestplace/midwife.shtml

[48] McCoy, D et al, (2008) 'Salaries and incomes of health workers in sub-Saharan Africa', *The Lancet*, 371: 3675–81. Conversion into sterling on 14 February 2011 using OANDA, http://www.oanda.com/

[49] Save the Children, *State of the World's Mothers 2010*

[50] Sierra Leone DHS, 2008, p122

[51] 'US$40bn – UN Secretary General's global strategy for women and children financial estimates', http://www.who.int/pmnch/activities/jointactionplan/100922_1_financial_estimates.pdf

[52] High Level Taskforce on Innovative International Financing for Health Systems (2009) *More Money for Health and More Health for the Money*, http://www.internationalhealthpartnership.net/CMS_files/documents/taskforce_report_EN.pdf

[53] World Health Organization, Global Health Observatory, accessed at http://apps.who.int/ghodata

[54] Action for Global Health, 'The IMF, the global crisis and HRH: still constraining policy space', http://www.actionforglobalhealth.eu/uploads/media/IMF_Paper10Reduced_02.pdf

[55] World Health Organization, WHO Global Code of Practice on the International Recruitment of Health Personnel, http://www.who.int/hrh/migration/code/practice/en/

[56] Unicef, *The State of the World's Children 2011*, p119

[57] Unicef, *The State of the World's Children 2001*, p105, www.unicef.org/sowc01/pdf/SOWC5.pdf

[58] Countdown to 2015, Decade report (2000–2010) p20, http://www.countdown2015mnch.org/reports-publications/2010-report

[59] USAID, 'About Paiman', http://www.paiman.org.pk/aboutpaiman/overview.php#PAIMAN

[60] Department for International Development, 'Training the next generation of midwives in Pakistan', 12 January 2009, http://webarchive.nationalarchives.gov.uk/+/http://www.dfid.gov.uk/casestudies/files/asia/pakistan-maternal-health.asp

[61] Pakistan DHS, 2006–07

[62] Save the Children (2010) *The State of the World's Mothers: Women on the front lines of healthcare*, p20

[63] Save the Children, *State of the World's Mothers 2010*

[64] World Health Organization, 'Global Atlas of the Health Workforce 2006', http://apps.who.int/globalatlas/docs/HRH/HTML/Geo_occ.htm

[65] Federal Republic of Nigeria Ministry of Health (2011) *Saving Newborn Lives in Nigeria*

[66] Women Deliver, 'Celebrate solutions: the midwives services scheme, Nigeria', http://www.womendeliver.org/updates/entry/celebrate-solutions-the-midwives-services-scheme-nigeria/

[67] Adegoke, A and Abubakar, A, Report to PRRINN-MNCH: Programme report on follow-up and supportive supervision of midwifery service scheme (MSS) midwives deployed to PRRINN-MNCH cluster facilities in Katsina, Yobe and Zamfara states

[68] Department for International Development (2010), *Choices for Women: Planned pregnancies, safe births and healthy newborns – The UK's framework for results for improving reproductive, maternal and newborn health in the developing world*.

[69] David Cameron, 'Our aid will hit the spot', The Guardian, 3 June 2010, http://www.guardian.co.uk/commentisfree/2010/jun/03/aid-developing-world-targeted-money