

# NURSING FOR NUTRITION

## Why we must invest in health workers to end maternal and child malnutrition

### SUMMARY

Malnutrition<sup>1</sup> is an underlying cause of an estimated 45% of child deaths. Poor maternal nutrition is also a contributing factor to maternal, infant and child mortality. Building long-term, sustainable solutions to reduce malnutrition is therefore essential for child survival and ending preventable child deaths.

Breaking the cycle of hunger and malnutrition over the long-term requires a multi-sectoral approach that addresses food security, the affordability and availability of nutritious foods, water, sanitation and hygiene (WASH), preventive health services such as immunisation, and social protection.

But to reduce mortality and poor health being caused by malnutrition *now*, we also need universal coverage of a package of 13 effective, direct interventions for preventing and treating malnutrition. Together, they have been identified as able to stop 25% of deaths in children under 5. **Health workers are essential for getting these interventions to the children who need them.**

The children at greatest risk of malnutrition are also the ones least likely to see a health worker. The global shortage of skilled health workers means that children in the world's poorest countries don't get the care that would stop them dying needlessly from causes related to malnutrition. To reduce malnutrition we need more health workers who are trained and supported to prevent and treat malnutrition in the places of greatest need.

As part of broader efforts to end preventable maternal, newborn and child deaths, strengthen health systems and achieve Universal Health Coverage<sup>2</sup>, Save the Children is calling on national and sub-national governments, with the support of development partners, to:

- Ensure that global nutrition initiatives, such as those led by the G8 and Scaling Up Nutrition (SUN) movement, recognise the role that health workers must play for improving maternal and child nutrition and support actions to strengthen health workforces;
- Increase investment in the recruitment and training of new health workers;
- Develop and implement health workforce plans that include strategies for continued training and professional development; support and supervision; fair remuneration; and incentives to encourage deployment to underserved areas;
- Ensure that achieving key competencies in maternal, infant and child nutrition is a core component of pre-service and in-service training curricula for all levels of health workers;
- Fully fund national, costed plans to scale up direct and indirect interventions to treat and prevent malnutrition, and include budget lines for the delivery of nutrition training for health workers;
- Maximise efficiencies and impact by improving alignment between policies and plans relating to health, nutrition and WASH as well as strategies to improve access to affordable and nutritious food.

## THE BURDEN OF MALNUTRITION

Malnutrition is an underlying cause of almost half of child deaths: 3.1 million deaths in 2011, or more than 350 children dying every hour.<sup>3</sup> Malnutrition is both a cause and an effect of poor health. Malnourished children are more susceptible to infectious disease and are at greater risk of dying from common childhood illnesses like pneumonia which can become deadly if not diagnosed and treated quickly. Malnutrition has also been shown to accelerate the progress of diseases such as HIV.<sup>4</sup> Repeated bouts of infectious diseases can also lead to malnutrition. Recent studies estimate that frequent episodes of diarrhoea contributed to approximately one in four cases of stunting among children under 2 years old<sup>5</sup>.

Malnutrition also contributes to one in five maternal deaths.<sup>6</sup> Stunted mothers are more likely to give birth prematurely<sup>7</sup> and have an underweight baby<sup>8</sup>. Therefore to end the inter-generational sequence of malnutrition, and prevent both maternal and child deaths, it is essential that women of reproductive age also receive adequate nutrition.

For those millions more malnourished children who survive, the lack of nutritious food, coupled with infection and illness, will often have a lasting impact on their development. Growing up without enough energy, protein, vitamins and minerals means children's brains and bodies do not develop properly and they become permanently stunted.<sup>9</sup> Stunted children are far less likely to fulfil their physical, academic or economic potential – they can suffer from slower brain development, enrol late in school and receive less education, so are estimated to earn an average of 20% less than well-nourished children when they become adults.<sup>10</sup>

Most of the damage caused by malnutrition occurs during the 1,000 days between conception and a child's second birthday. This is the period when a child's health and diet – and also the mother's health and diet – has a profound impact on her or his development. Even if a child's diet improves later in life, the damage done during this period can be irreversible.

### **The lack of health workers in Bangladesh means there is nowhere to turn for the poorest malnourished children**

Five-month-old Nirob is battling against a terrible combination of malnutrition and disease. He's been losing weight since he was born, and won't feed regularly. He has difficulty breathing and persistent diarrhoea.

His parents Shipra and Monto are also weak from malnutrition. The monsoon season was hard and they weren't able to grow enough food to eat. They usually eat one and a half meals a day but sometimes they struggle to eat even that as they have no money to buy the fuel to cook it with.

Shipra doesn't know what is wrong with her son and wishes she could take him to a doctor. But no health workers visit their rural village and the family cannot afford to make the 50km journey to the nearest clinic. Even if they could, the lack of transport and difficult terrain make the trip too difficult for their sick baby.

Shipra says "I'm worried about how I'll save Nirob. Where can I go for help? I feel so bad that he's so sick and I can't do anything. I just want Nirob to be safe and well. Only then can I think about his future."



## Scaling up access to direct nutrition interventions can save lives now

Breaking the cycle of hunger and malnutrition over the long-term requires a multi-sectoral approach that addresses weaknesses in the health system; food security; the affordability and availability of nutritious foods; WASH; immunisation and other preventive health services; and social protection<sup>11</sup>. The solutions that can provide an *immediate* impact on children's health and nutrition are already well known and documented. In 2008, world nutrition experts worked together to identify a group of 13 cost-effective direct nutrition interventions (see box below). They estimated that if these interventions were scaled up to reach every child in the 36 countries that are home to 90% of malnourished children, there would also be a substantial reduction in many illnesses<sup>12</sup>, at least a one-third reduction in the cases of stunting, and ultimately 25% of under-five deaths could be prevented<sup>13</sup>.

### 13 direct nutrition interventions – all can be provided by health workers

#### Interventions that encourage changes in behaviour to improve nutrition:

1. Promote breastfeeding for newborns within one hour of delivery
2. Promote exclusive breastfeeding for the first 6 months
3. Promote a good complementary diet for children aged 6 to 24 months
4. Encourage hand washing or other interventions for good hygiene.

#### Micronutrient interventions:

For infants and children:

5. Increase the intake of zinc by giving supplements,
6. Give zinc to treat diarrhoea
7. Give vitamin A supplements every six months
8. Use iodized salt in food for children >2 years and mothers

#### For pregnant or breastfeeding mothers:

9. Improve nutrient intake by taking multiple micronutrients supplements
10. Providing iodine through iodization of salt
11. Provide iron and folate supplements
12. Provide calcium supplements

#### Therapeutic feeding interventions:

13. Treat children with severe acute malnutrition using special foods

Source: *The Lancet, 'Maternal and Child Undernutrition', Special Series, 2008.*

Achieving universal coverage of these direct interventions requires there to be a strong, functioning healthcare service with sufficient numbers of health workers who have the right knowledge, skills, and resources to help prevent and treat malnutrition. Health workers have a vital role to play in promoting good maternal and child nutrition, particularly during the crucial 1,000 day window: they are the bridge between the life-saving nutrition interventions and the children who need them.

## The children most likely to be malnourished are also the least likely to see a health worker

According to the WHO, the minimum number of doctors, nurses and midwives required to deliver *basic* essential health services is 23 per 10,000 people; a country that falls below this level is considered to have a critical shortage. Most high-income countries exceed this threshold several times over – the United Kingdom and United States both have 122 per 10,000 people, and Norway has 360.<sup>14</sup> Of the 30 countries with the highest rates of stunting, just one has reached the

recommended threshold and 29 are classified as having a severe health worker shortage (see Figure 1).<sup>15</sup> For instance, in Afghanistan, where almost three out of five children are stunted, there are just 7 doctors, nurses and midwives to serve every 10,000 people.

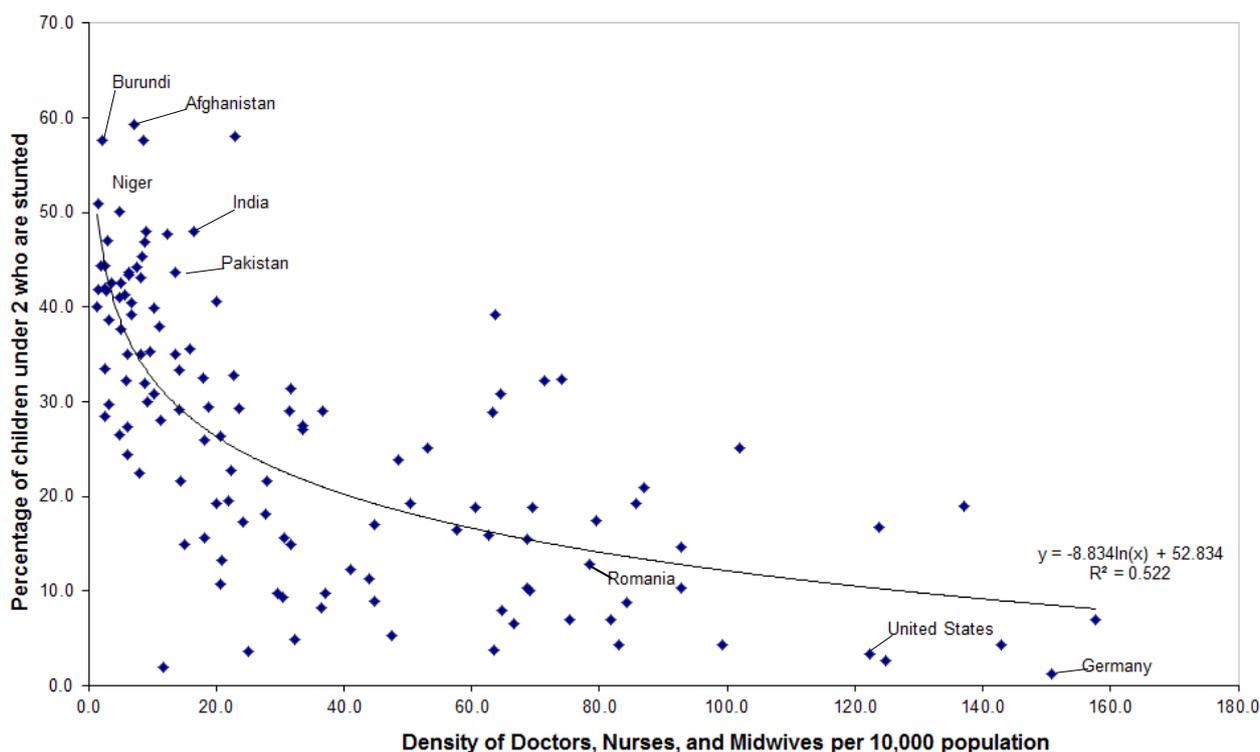
Figure 1: The 30 countries with the highest rates of stunting and their health worker density (number of doctors, nurses and midwives per 10,000 population). Sources: Global Health Workforce Statistics and UNICEF State of the World's Children 2013.

Country	Stunting rate (% aged 0-59 months)	Health worker density (per 10,000 pop)	Country	Stunting rate (% aged 0-59 months)	Health worker density (per 10,000 pop)
Afghanistan	59	7	Pakistan	44	14
Burundi	58	2	DR Congo	43	6
Timor-Leste	58	23	Benin	43	8
Yemen	58	9	Mozambique	43	4
Niger	51	2	Papua New Guinea	43	5
Madagascar	50	5	UR Tanzania	42	3
Guatemala	48	9	Somalia	42	2
India	48	17	Liberia	42	3
Lao PDR	48	12	Bangladesh	41	6
Malawi	47	3	Central African Republic	41	5
Zambia	45	9	Nigeria	41	20
Ethiopia	44	3	Nepal	41	7
Sierra Leone	44	2	Cambodia	40	10
Rwanda	44	8	Guinea	40	1
Eritrea	44	6	Lesotho	39	7

Looking at a wider set of countries, Figure 2 shows a clear association between countries with high rates of stunting and those that have a low density of doctors, nurses and midwives. This indicates that there aren't enough skilled health workers to prevent and treat malnutrition in the places where they are needed most. Low health worker density is also an indication that countries have a weak health system and low coverage of direct nutrition interventions and other essential health services – all factors that increase a mother and child's risk of malnutrition.

Whilst this data alone doesn't prove a direct causal relationship between the density of health workers and rates of stunting, it shows a strong association between the two variables, particularly where the number of doctors, nurses and midwives is below 30 per 10,000 population. Countries wanting to reduce stunting and improve the health of the wider population should therefore strive to exceed the minimum health worker density threshold recommended by WHO.

Figure 2: Correlation between rates of stunting and health worker density for all countries where data is available<sup>16</sup>. Sources: Global Health Workforce Statistics and UNICEF State of the World's Children 2013.



### Further inequalities within countries

The burden of malnutrition is also unequal *within* countries. It is the poorest and most marginalised children – such as those from minority ethnic groups, religions or tribes – who are most likely to be malnourished but least likely to have access a health worker. Whilst stunting affects huge proportions of children across all income groups in many of the poorest countries, it is the very poorest children who are greatest risk of becoming stunted. As countries develop, the gap between rich and poor tends to widen. In lower-middle income countries such as India and Nigeria the chances of being stunted are much greater for the poorest children compared to those in higher income groups.<sup>17</sup>

The places that most health workers are located are not the places where the most malnourished children live. Globally, children in rural areas are on average twice as likely to be underweight than those in urban areas<sup>18</sup>. However, in most countries, the majority of health workers tend to work in the capital cities or wealthier urban areas, leaving those in rural and remote communities and in the poorest urban areas without access to professional care. For example, the capital of Uganda, Kampala, has four times as many health workers as the rest of the country put together.<sup>19</sup> The unequal distribution of health workers perpetuates inequities in nutrition outcomes.

### Why aren't there enough health workers?

The reasons for the shortage and unequal distribution of health workers are many and complex. Low financial investment in health and insufficient capacity for training and ongoing support for health workers mean that there aren't enough new health workers joining the workforce. Poor working conditions and inadequate or late pay, as well as the lure of better opportunities in other parts of the country, outside the public sector or abroad pose continuous challenges for retention and preventing absenteeism.

Suitable policies and strategies need to be adopted and implemented to attract and retain health workers with an appropriate skills mix, including the skills necessary to diagnose, prevent and treat malnutrition. As relevant to each country context, strategies may include tailoring health worker education to practice in different settings; paying health workers a living wage; ongoing personal and professional support; career development opportunities and partnerships between the public and private sectors.

Strategies to tackle unequal access to health and nutrition care within countries should also explore ways to encourage health workers to take up posts in remote locations and under-served areas. Many countries already require newly qualified health workers to work in underserved areas for a period of time or have created incentives for health workers to live and work in challenging contexts<sup>20</sup> Improvements in working conditions including in rural infrastructure, as well as better supervision, equipment and a functioning supply and referral chain will increase health worker job satisfaction and therefore retention rates.

### **How Save the Children is bringing care to those children at greatest risk of malnutrition**

Children living in Nigeria's northern states experience higher rates of poverty and malnutrition than in the rest of the country. In 2010, Save the Children began a nutrition programme in Katsina state in response to a malnutrition crisis exacerbated by poor rainfall which led to a weak harvest and food shortages. More than 16% of children aged six months and five years in this area have severe acute malnutrition. However rates of acute malnutrition and stunting are high even during good harvest years, because of a range of traditional feeding practices that prevent babies and children from receiving the nutrients they need to grow and develop properly.

Save the Children is working with partners across northern Nigeria to scale up the treatment of acutely malnourished children and improve coverage of infant and young child feeding to prevent further cases. We support facilities with inpatient care and train health workers to treat children suffering from severe acute malnutrition and other complications, such as malaria or measles. Malnourished children are monitored during weekly sessions where they are measured, examined and prescribed therapeutic food and medication.

Save the Children trains teams of Community Mobilisers who teach mothers and the wider community about harmful practices, and explain better ways of caring for children. We also advocate with the local authorities and government for nutrition education and treatment to be included in their healthcare policies and services in the future.

### **Frontline health workers have an important role to play**

As countries work towards Universal Health Coverage, they should aim to build a health workforce fit to deal with all the health needs of the population including reducing child mortality and malnutrition.

The majority of tasks related to tackling malnutrition can be carried out, even in remote and impoverished settings, by community health workers<sup>21</sup> and other kinds of 'frontline' health workers such as local pharmacists, nurses and doctors. They can monitor children's height and weight to spot signs of malnutrition; treat diarrhoea; promote breastfeeding and appropriate complimentary feeding; distribute vitamins and micronutrients; and counsel families (particularly adolescent girls and pregnant women) about a balanced diet, hygiene and sanitation as well as appropriate breastfeeding practises. In addition to directly preventing and treating malnutrition, frontline health workers can also play an important role in mobilising the public to demand their rights to health and nutrition and hold decision makers to account for promises that they have already made.

With the correct training, support and supervision, it has been shown that health workers without professional qualifications can even treat uncomplicated cases of severe acute malnutrition at the community level<sup>22</sup>. However, more serious cases need to be referred to a health facility and that is why all children also need access to a fully-functioning health system with a sufficient number and mix of more highly skilled and specialist health workers.

## Key moments where health workers can make a difference

The World Health Organization (WHO) recommends that pregnant women should have at least four antenatal visits from a skilled health worker and at least one postnatal visit within two days of birth. These are key opportunities for mothers to receive counselling about how to ensure optimum nutrition for themselves and their baby. But in countries with the highest burden of maternal and child mortality, only 56% of mothers receive four or more antenatal visits. Postnatal care coverage rates are even lower: 41% for mothers and 50% for babies<sup>23</sup>.

### How frontline health workers are helping to overcome barriers to breastfeeding

In 1994 Pakistan began training and deploying Lady Health Workers to increase coverage of health services. Lady Health Workers focus largely on essential maternal, newborn and child care, including nutrition education and providing micronutrient supplements to children and women of reproductive age

Early initiation and exclusive breastfeeding rates are low in Pakistan, but trends are moving in the right direction. Some of the main barriers to breastfeeding are cultural which requires social and behavioural change. Lady Health workers, with their knowledge of local beliefs and practices, play a critical role in educating mothers and communities about the benefits of breastfeeding for children's health and nutrition.

Shahnaz Gul, a Lady Health Worker in Pakistan's Punjab Province, believes that Lady Health Workers are at the forefront of the revolution that is better nutrition.

“Our work focuses primarily on educating mothers about how to look after their children. Newborn babies must be fed only their mother's milk, immediately upon birth. Rural women are unaware of the benefits of breast-milk. Many either supplement breast-milk with cows' milk or discard breast-milk completely for a breast-milk substitute.

“We emphasise exclusive breastfeeding for babies and tell mothers and their families the importance of breast-milk and how it can protect them from a host of diseases and infections. We try to instil better nutrition practices to ensure that families stay healthy. Hygiene is a core component of our work and we stress its importance everywhere.”

Breastfeeding is the closest thing we have to a 'silver bullet' in the fight against child malnutrition and newborn deaths. Properly trained health workers are important for explaining the benefits of breastfeeding before birth and supporting new mums to start breastfeeding within the first hour of an infant's life. Women who had a skilled health worker present at the time of birth were twice as likely to initiate breastfeeding within the first hour as those who did not have a skilled birth attendant.<sup>24</sup> The global shortage of midwives and health workers with midwifery skills means that 48 million women give birth without any skilled assistance and miss out on crucial support and advice<sup>25</sup>.

## Weak health systems are holding back implementation of nutrition plans

Whilst many countries have developed national maternal, newborn and child health strategies that incorporate nutrition, the actual delivery of these strategies is often inadequate because of a lack of human resources and institutional capacity to plan and implement effective responses to child health and nutrition.<sup>26</sup>

The constraint that the shortage of appropriately skilled health workers has on nutrition efforts is well recognised. A global plan produced by the WHO to improve maternal and child malnutrition has observed that weak health systems – of which health workers are an essential component – are limiting the implementation of those direct nutrition interventions that can be managed by the health sector. It notes that “the availability of human resources limits the expansion of nutrition actions, and the proportion of primary care workers is a major determinant of programme effectiveness”.<sup>27</sup>

Similarly, the Scaling Up Nutrition movement’s Framework for Action also recognises that “expansion [of nutrition interventions] to full scale requires major strengthening of capacity both on nutrition and on nutrition-related aspects of country systems—for example financial, procurement, human resources, and accountability systems.”<sup>28</sup>

## Building the health workforces needed to prevent malnutrition

In order to reach all children with direct nutrition interventions, the global shortage of skilled health workers and their uneven distribution within countries need to be urgently addressed. Many existing health workers could also do more to fight malnutrition if they had better training, equipment and support.

Tackling nutrition is not just the responsibility of health workers or the health or nutrition sectors; breaking the cycle of malnutrition requires many sectors to work together in a coordinated manner. Building a strong health workforce should however be part of any comprehensive strategy for improving maternal and child nutrition.

As part of broader efforts to end preventable maternal, newborn and child deaths, strengthen health systems and achieve Universal Health Coverage, national and sub-national governments, with the support of development partners, should take the following actions:

- Ensure that global nutrition initiatives, such as those led by the G8 and Scaling Up Nutrition (SUN) movement, recognise the role that health workers must play for improving maternal and child nutrition and support actions to strengthen health workforces;
- Increase investment in the recruitment and training of new health workers;
- Develop and implement health workforce plans that include strategies for continued training and professional development; support and supervision; fair remuneration; and incentives to encourage deployment to underserved areas;
- Ensure that achieving key competencies in maternal, infant and child nutrition is a core component of pre-service and in-service training curricula for all levels of health workers;
- Fully fund national, costed plans to scale up direct and indirect interventions to treat and prevent malnutrition, and include budget lines for the delivery of nutrition training for health workers;
- Maximise efficiencies and impact by improving alignment between policies and plans relating to health, nutrition and WASH as well as strategies to improve access to affordable and nutritious food.

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## References

- <sup>1</sup> Malnutrition can take a number of forms, but for the purpose of this briefing, we are primarily focusing on chronic undernutrition where a persistent, inadequate diet results in a child being underweight for their age, too short for their age (stunted), dangerously thin (wasted), and/or deficient in vitamins and minerals.
- <sup>2</sup> Universal Health Coverage is defined by the World Health Organization as all people having access to quality health services they need without financial hardship.
- <sup>3</sup> *The Lancet*, Maternal and Child Nutrition, Special Series, June 2013.
- <sup>4</sup> Tang, A. M. et al, "Micronutrients: current issues for HIV care providers", *AIDS* 19(9), June 2005.
- <sup>5</sup> Black, R et al. 'Global burden of childhood pneumonia and diarrhoea', *The Lancet* Special Series on Childhood Pneumonia and Diarrhoea, April 2013.
- <sup>6</sup> Black, R et al. Maternal and child undernutrition: global and regional exposures and health consequences, *The Lancet*, 2008, 371: 243-260.
- <sup>7</sup> March of Dimes, PMNCH, Save the Children, WHO (2012) *Born Too Soon: The Global Action Report on Preterm Birth*. World Health Organization. Geneva.
- <sup>8</sup> World Bank (2006) *Repositioning Nutrition as Central to Development: A strategy for largescale action*
- <sup>9</sup> M H N Golden, 'The role of individual nutrient deficiencies in growth retardation of children as exemplified by zinc and protein', In: J C Waterlow (ed) *Linear Growth Retardation in Less Developed Countries*, New York: Raven press, 1988.
- <sup>10</sup> S Grantham-McGregor, et al 'Development potential in the first 5 years for children in developing countries', *The Lancet*, 2007, 369: 60-70.
- <sup>11</sup> Save the Children (2012) *A Life Free from Hunger*
- <sup>12</sup> *The Lancet*, 'Maternal and Child Undernutrition', Special Series, January, 2008
- <sup>13</sup> Bhutta, Z.A, et al, What works? Interventions for maternal and child undernutrition and survival, *The Lancet*, 2008, Vol 371: 417-440.
- <sup>14</sup> World Health Organization (2013) *World Health Statistics 2013*.
- <sup>15</sup> Timor-Leste is at the WHO recommended threshold of 23 health workers per 10,000. Data for Guatemala only includes the number of doctors.
- <sup>16</sup> The line is logarithmic regression fit with the equation for the line and the coefficient of determination,  $R^2$ .
- <sup>17</sup> Save the Children (2012) *A Life Free from Hunger*
- <sup>18</sup> Unicef (2013) *The State of the World's Children 2013*
- <sup>19</sup> Republic of Uganda's Ministry of Health. As quoted in Save the Children (2011) *No Child Out of Reach: Time to End the Health Worker Crisis*.
- <sup>20</sup> Frehywot et al, Compulsory service programmes for recruiting health workers in remote and rural areas: do they work? *Bulletin of the World Health Organization* 2010, 88:364-370.
- <sup>21</sup> The term 'community health worker' is used to describe individuals chosen by their community to provide basic health and medical care. They receive basic medical training but generally do not have professional medical qualifications.
- <sup>22</sup> World Health Organization/World Food Programme/United Nations System Standing Committee on Nutrition/The United Nations Children's Fund (2007), Joint statement on Community-Based Management of Severe Acute Malnutrition.
- <sup>23</sup> Countdown to 2015: Tracking Progress in Maternal, Newborn and Child Survival, March 2012.
- <sup>24</sup> Save the Children (2013) *Superfood for Babies: How overcoming barriers to breastfeeding will save children's lives*
- <sup>25</sup> Save the Children (2011) *Missing Midwives*
- <sup>26</sup> Bryce, J, et al, Maternal and child undernutrition: effective action at national level, *The Lancet*, 2008, 371: 510-526.
- <sup>27</sup> World Health Organization (2012) 'Draft Comprehensive Implementation Plan on Maternal, Infant and Young Child Nutrition' (Prepared for 65<sup>th</sup> World Health Assembly).
- <sup>28</sup> *Scaling Up Nutrition: A Framework for Action* (Reprinted 2011)

**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**