EVERY NEWBORN ACTION PLAN:

AN ACTION PLAN TO END PREVENTABLE NEONATAL DEATHS IN MALAWI
ACKNOWLEDGEMENTS

We would like to express our sincere gratitude to all the partners, institutions and individuals who contributed towards the development of the Newborn Action Plan. Your tireless efforts, enthusiasm, financial and professional contributions have made the plan what it is now. We are grateful for your continued support during the execution of the plan and are hopeful that all these efforts will lead to a reduction of newborn deaths within the first four weeks, in Malawi, over the next five years. It is our sincere hope that the surviving infants will also have a good quality of life in the future.

The Ministry of Health in Malawi would like to acknowledge the technical and financial assistance received from Save the Children Malawi and UNICEF at various stages of the development of the action plan.

We also wish to express our gratitude to all the professional associations, regulatory bodies and teaching institutions that provided valuable input in the various sections of the plan.
FOREWORD

Malawi contributes significantly to the number of newborn deaths recorded globally, with an estimated 18,000 deaths yearly. Currently, the preterm birth rate is 18 per cent, the highest in the world, and about 5,000 babies are stillborn. Thus, while a significant reduction in under-five mortality has resulted in the achievement of MDG 4, neonatal mortality rates have remained high, contributing to an estimated 40 per cent of the under-five mortality rate. Preterm births are the leading cause, contributing to 36 per cent of newborn deaths.

A large proportion of these newborn deaths are preventable: therefore, intensified action and guidance are required. The Every Newborn Action Plan is a road map for this change. It is an action plan to end every preventable death. It has brought together a broad partnership of major stakeholders which is significant because addressing newborn survival requires clear consensus on evidence, strategies and actions by a broad community of partners. The Plan underpins Malawi’s commitment to bending the curve for newborn survival, thereby maintaining the gains in MDG 4 by reducing neonatal mortality and identifying priority actions to improve neonatal health care services. It sets out a vision, targets and strategic objectives, and recommends key actions to be implemented. It is supported by new data analysis and evidence and is a platform for action by all partners.

The Every Newborn Action Plan builds on existing initiatives that include national and regional efforts such as CARMMA, Global Strategy for Women’s and Children’s Health, UN Commission on Lifesaving Commodities, A Promise Renewed for Child Survival, FP2020 and The Commission on Information and Accountability.

Malawi’s newborn action plan will guide the efforts of the Ministry of Health, districts and other stakeholders to design specific plans for accelerating progress towards ending preventable deaths among the newborn. The country is committed to making all efforts possible to address avoidable stillbirths and newborn deaths. We are confident that this Action Plan will bring a sharper focus to the implementation of both existing and new initiatives and therefore recommend it to all stakeholders planning for the survival of the newborn in the country.

Every Newborn Action Plan is a product of extensive consultation and collaboration amongst various departments of the Ministry of Health and stakeholders including development partners such as UNICEF, UNFPA and WHO, NGOs, CHAM, regulatory bodies and training institutions, as well as Save the Children International who provided significant financial support.

The Ministry of Health is fully committed towards the implementation of this Action Plan and welcomes collaboration with all necessary stakeholders to mobilize the necessary resources and improve access to and use of quality maternal and newborn health services in Malawi.

Secretary for Health
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# ACRONYMS

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<thead>
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<th>Description</th>
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<tbody>
<tr>
<td>CAG</td>
<td>Community Action Group</td>
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<tr>
<td>DHMT</td>
<td>District Health Management Team</td>
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<tr>
<td>ENAP</td>
<td>Every Newborn Action Plan</td>
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<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<tr>
<td>KMC</td>
<td>Kangaroo Mother Care</td>
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<tr>
<td>M&amp;E</td>
<td>Monitoring and Evaluation</td>
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<tr>
<td>MNH</td>
<td>Maternal and Newborn Health</td>
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<tr>
<td>MoH</td>
<td>Ministry of Health</td>
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<tr>
<td>NMR</td>
<td>Neonatal Mortality Rate</td>
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<tr>
<td>NND</td>
<td>Neonatal Death</td>
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<tr>
<td>PROM</td>
<td>Premature rupture of membranes</td>
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<td>RMNCH</td>
<td>Reproductive, Maternal, Newborn and Child health</td>
</tr>
<tr>
<td>SBA</td>
<td>Skilled Birth Attendant</td>
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</table>
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EXECUTIVE SUMMARY

Globally, neonatal mortality accounts for more than 40% of deaths among children below the age of 5 years and therefore any further progress in reducing childhood deaths is to be significantly influenced by reductions in newborn deaths.

Malawi is one of the countries in Africa that has achieved Millennium Development Goal MDG 4 (Reduce child mortality by two thirds by 2015) ahead of the target date of 2015. Neonatal mortality, which is very high (29/1,000 live births), accounts for over 40 per cent of under-five mortality and this has an effect on further progress in reducing child mortality. Newborns in Malawi continue to die from common causes namely sepsis, prematurity and asphyxia, which by large are preventable.

While there are a number of interventions and strategies for reducing newborn mortality implemented across Malawi, their effectiveness is often limited by a lack of human and material resources coupled with harmful cultural practices. Availability, quality and timely utilization of newborn care health services are quite limited. It is recognized that ensuring the survival of preterm babies and their mothers requires sustained and significant planning, resources and practical support.

The Malawi Newborn Action Plan has been developed in response to the global Every Newborn Action Plan (ENAP) which was launched at the World Health Assembly in June 2014. The Malawi plan outlines a targeted strategy for accelerating the reduction of preventable newborn deaths and stillbirths in the country. Its goal is to reduce neonatal mortality from the present 29 per 1,000 live births to 23 by 2020, and 15 per 1,000 live births by 2035, with the ultimate goal of ending all preventable newborn deaths, including stillbirths, in line with the Promise Renewed (a global commitment to stop preventable childhood deaths). This will be achieved through the following strategies:

- **Strategy 1:** Strengthen and invest in care during labour, delivery, first day and week of life
- **Strategy 2:** Ensure that every newborn is counted: measurement, programme tracking and accountability
- **Strategy 3:** Strengthening Advocacy, Communication and Social Mobilisation, and other Community-Based Interventions
- **Strategy 4:** Reach every woman and every newborn to achieve equity and quality universal coverage

The plan aims to strengthen the continuum of care for women and children along two dimensions (through cares provided across the life cycle and at all levels of health service delivery). It describes activities that are to be undertaken to achieve the outlined strategic objectives. It also outlines the implementation and monitoring framework for the action plan.

The Malawi Newborn Action Plan will be implemented within the existing Reproductive, Maternal, Newborn and Child Health framework, and guided by the principles of integration, equity, gender, quality of care, convergence, accountability and partnerships. The plan is an affirmation of Malawi’s commitment towards ending preventable neonatal deaths and improving the quality of life of the survivors.
CHAPTER 1. INTRODUCTION

1.1 Global picture

According to the estimates generated by the UN Inter-agency Group for Child Mortality Estimation in 2014, globally 2.8 million babies die in the first four weeks of life (UNICEF 2014). Of these, 1 million die on day one and 2 million before completing the first week of life. A similar number, about 2.6 million babies, are stillborn (HNN 2011). Perinatal deaths are responsible for almost 7 per cent of the total global burden of deaths, a proportion which exceeds that caused by vaccine preventable diseases and malaria combined (WHO 2008). Neonatal deaths (NND) contribute to 44 per cent of all deaths among children under 5 years of age. Hence, reducing neonatal deaths is an important target for the eventual reduction of childhood deaths overall (Li Lu et al. 2014). Global estimates for the direct causes of NNDs are prematurity (34 per cent), intrapartum-related events (25 per cent), sepsis (16 per cent) and congenital infections (9 per cent), accounting for 15, 11, 7 and 4 per cent of under-five deaths respectively (Li Lu et al. 2014).

The Neonatal Mortality Rate (NMR) of a country is widely used as an indicator of public health, quality of health services, distribution of wealth and the general standard of living (Lawn et al. 2013). As many as 99 per cent of NNDs that occur each year take place in the poorest countries of the world making newborn health one of the most striking examples of global health inequality (Lawn et al. 2013). Sub-Saharan Africa has the highest risk of NND and is among the regions showing the least progress (See Figure 1).
1.2 Situational analysis of newborn health in Malawi

Malawi is a landlocked country in sub-Saharan Africa with a population of 16,797,618. It is one of the least developed countries, ranked number 177 out of 184 countries on the Human Development Index by UNDP in 2013. The country has made significant progress in reducing child mortality, achieving MDG 4 targets ahead of the 2015 deadline. It is recognized in the Promise Renewed report of 2014 to be one of the countries with a faster rate of reduction among those with high burden of deaths. Its current under-five mortality rate has fallen to 71 per 1,000 live births from the 1990 level of 244.

However, most of this progress is due to a reduction in mortality after the first month (post neonatal mortality) which dropped by a rate of 7.1 per cent per year (WHO Regional Office for Africa 2012), whereas neonatal mortality has been dropping at a slower rate of 3.5 per cent per year (See Figure 2) (Zimba et al. 2012).

Figure 2: National progress towards MDG 4 for newborn and child survival since 1990, Adapted from Zimba et al 2012 with most recent data

<table>
<thead>
<tr>
<th>Mortality Rate</th>
<th>1990-2010</th>
<th>2000-2013</th>
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<tr>
<td>Under-five mortality rate (UN)</td>
<td>3.4%</td>
<td>7.3%</td>
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<tr>
<td>Under-five mortality rate (DHS/MICS)</td>
<td></td>
<td></td>
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<tr>
<td>Children 1-59 months mortality rate</td>
<td>3.6%</td>
<td>8.6%</td>
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<tr>
<td>Neonatal mortality rate (UN)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neonatal mortality rate (DHS/MICS)</td>
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Average annual rate of reduction

According to the Malawi Demographic and Health Survey 2010, the NMR in Malawi had dropped from 44 to 31 per 1,000 live births. The 2015 MDG Endline Survey shows that the country has further reduced the NMR to 29 per 1,000 live births. However, the reduction also shows significant disparities among districts (See Figure 3). Zomba city was found to be the safest place for survival as a newborn in Malawi (with a mortality rate of 12 per 1,000 live births), and districts like Salima, Lilongwe and Machinga also registered significantly lower mortality rates than national averages. On the other hand, the risk of dying as a newborn was found to be higher than 40 per 1000 live births in Mangochi and Thyolo.

**Figure 2:** Neonatal mortality rate for districts in Malawi


### 1.2.1 Main causes of newborn deaths in Malawi

The major causes of newborn death in Malawi are complications from preterm birth, severe infections (sepsis) and birth asphyxia. These three conditions account for 89 per cent of newborn deaths in the country. The relative proportions of these have not changed significantly over the past 10 years (Zimba et al. 2012; Chihana et al., WHO 2004; Liu Lu et al. 2012). Additionally, according to the countdown report for 2014, the stillbirth rate in Malawi is estimated at 24 per 1,000 births. It is generally believed that half of all stillbirths are caused by complications of labour and delivery.

Malawi has the highest rates of preterm birth in the world with rates from community-based studies estimated at 18.1 (Kulmala et al. 2000) to 20.2 per cent (Van der Broek et al. 2005). Associated risks for preterm birth include an adolescent mother, primiparity (first pregnancy), anaemia, poor nutritional and micronutrient status of the mother and
short stature, maternal malaria and other infectious diseases such as urinary tract infection and bacterial vaginosis, and sexually transmissible infections like syphilis and human immunodeficiency virus (HIV) (Goldenberg et al. 2008).

Mortality is very high for infants born preterm. Research from community studies in southern Malawi that documented a 20 per cent rate of preterm births (16 per cent as late preterm and 4 per cent early preterm), has shown that among premature compared to term babies, the odds for survival for perinatal mortality is 9.6 per cent and for neonatal mortality is 11 (Broek et al. 2005). The risk for those born very premature (24–33 weeks) is even higher, with a 75 per cent risk of death within the first six weeks (Van den Broek et al. In press). The risk of death even in late preterm babies is twice as high as those born at term (Broek et al. 2005). Preterm babies are also at an increased risk of post-neonatal mortality, stunting and long-term neurodevelopmental impairment during childhood.

Syphilis in pregnant mothers – which is high in Malawi – is a risk factor for preterm birth and it can also lead to congenital syphilis. Screening and timely treatment of syphilis are proven to decrease neonatal mortality. The National HIV and Syphilis serosurveys conducted in 2010 found a prevalence rate for syphilis of 1.2 per cent (MoH 2011). This rate is unchanged since 2007 but is much lower than it was in the 1990s and mid-2000s. The highest prevalence (7.6 per cent) is in Mulanje and the lowest rates in the northern region (0.5 per cent). Studies in Malawi have shown that mothers with active syphilis were 11 times more likely to have stillbirths, 18 times more likely to have a macerated stillbirth, almost 5 times likely to experience early and late NNDs and faced more than double the risk of post-neonatal infant death (Mwapasa et al. 2006). Identifying and treating syphilis is a priority in Malawi.

The 2015 MDG Endline Survey shows that 87.5 per cent of live births were weighed at birth. This is an improvement from the 2006 Multiple Indicator Cluster Survey which showed that only 48 per cent of babies in Malawi were weighed at birth. Low Birth Weight is any birth weight less than 2,500 grams. It encompasses both small for gestation age and premature babies; and these constitute 12.9 per cent of all newborns as seen in the 2015 MDG Endline Survey. The prevalence of low birth weight varies by district (UNICEF National Statistics Office 2008). It is particularly high in Salima (17 per cent), Dedza (16 per cent) and Phalombe (15 per cent) districts. According to WHO, birth weight is the single best predictor of survival and of normal growth and development among children (WHO 1980).

Birth asphyxia accounts for approximately 28 per cent of newborn deaths in Malawi. Perinatal asphyxia is directly linked to the quality of care during childbirth and can be averted by good quality obstetric care (WHO 2009). Providing resuscitation at birth is proven to decrease neonatal mortality, yet appropriate neonatal resuscitation skills are lacking; worse still, advanced neonatal care services are not available in most facilities. An emergency obstetric care assessment in Malawi identified that fewer than 33 per cent of health care providers had a satisfactory level of newborn resuscitation knowledge and skills. The Helping Babies Breathe initiative commenced in 2011 in Malawi to try and tackle birth asphyxia. This is an intervention designed to strengthen resuscitation skills amongst health care providers in low resource settings. Programme reports show that, since its commencement, 60 per cent (1,763) of all health care professionals (nurse/midwives and clinicians) have been trained and equipped with skills to manage birth asphyxia.
Neonatal sepsis is also a major problem in Malawi. Mortality in neonatal sepsis is very high (33–48 per cent). Hospital studies in Malawi examining the aetiology of neonatal sepsis have identified Group B streptococcus (S. agalactiae) (17 per cent), Streptococcus pneumonia (10 per cent) and non typhoidal salmonella (14 per cent) (Milledge et al. 2005). Group B streptococcal carriage rate among hospitalized antenatal mothers is 21 per cent and is not affected by HIV status (Gray et al. 2011). It is known that simple cord care and clean practices during and after birth can make a difference to the rates of sepsis. Program reports and other documents describing the situation of newborn care in Malawi consistently reveal that the majority of facilities including at the secondary and tertiary levels lacked the necessary laboratory investigations for the diagnosis of neonatal infections.

1.2.2 Interventions that can save newborn lives
The Government of Malawi has shown commitment to improving neonatal morbidity and mortality. Policies have been put in place that aim to tackle essential care for all babies, care of the sick newborn and care of low birth weight/premature infants. The introduction of key maternal and newborn care activities to the community health services provided by Health Surveillance Assistants (formal community health workers) was also an important step forward.

A number of key interventions have been shown to be effective in reducing neonatal mortality worldwide, in the preconception, antenatal, intrapartum and postnatal stages (Darmstadt et al. 2005) (see appendix for details). Malawi has been implementing some of these interventions. Care during labour and childbirth have the potential to reduce stillbirths by a third. It is important to emphasize that Basic Emergency Obstetric Care can reduce intra-partum-related NNDs by 40 per cent and Comprehensive Emergency Obstetric Care can also reduce newborn mortality by 40 per cent, whereas skilled attendance at birth alone without access to the emergency component has a smaller effect at 25 per cent (Darmstadt et al. 2005).

The use of antenatal corticosteroids to manage preterm labour not only reduces NNDs by 31 per cent, but also reduces the need for specialized care for newborns, such as ventilators. However, there are criteria for safely administering antenatal corticosteroids that include accurately determining the gestational age and the proper management of maternal and neonatal complications. Administering antibiotics for prolonged premature rupture of membranes (PROM) reduces early onset neonatal sepsis. Clean birth practices, especially hand-washing with soap and water by a birth attendant, has been found to reduce mortality due to sepsis in births at home (15 per cent), facilities (27 per cent) and during the postnatal period (40 per cent).

Malawi’s implementation of some of these interventions has met with variable success. Notable successes are the antenatal administration of tetanus toxoid vaccine (with current coverage reported in HMIS at 89.7 per cent), intermittent preventive therapy for malaria in pregnancy (19.3 per cent receiving three or more doses) and early and exclusive breastfeeding (74.5 per cent and 70.2 per cent respectively). Kangaroo mother care (KMC) for low birth weight babies and neonatal resuscitation using the Helping Babies Breathe algorithm have also been introduced widely. Malawi should make it a priority to strengthen health systems to achieve and sustain the high coverage of these interventions.
CHAPTER 2. BOTTLENECK ANALYSIS OF HEALTH SYSTEM ISSUES AFFECTING NEWBORN CARE IN MALAWI

Recognizing the magnitude of neonatal morbidity and mortality as elaborated in the previous chapter, Malawi joined the global community in developing a newborn specific country plan. The process of developing the newborn action plan started with a bottleneck analysis using a structured data collecting tool developed by the Global Every Newborn Steering Group. The tool mainly focused on the building blocks of national health systems, which include leadership and governance, financing, health workforce, essential medicines and products, health service delivery, information systems and community ownership and partnership. The outputs of the bottleneck analysis are shown in the appendix. Its key points are listed below.

2.1 Leadership and governance

Malawi has an established structure within the constitution that endeavours to protect the rights of children. The Ministry of Health (MoH) has developed a Sexual and Reproductive Strategy and its Child Health Strategy outlines issues dealing with newborns.

The following are a summary of bottlenecks identified under leadership and governance in Malawi:

- The road map does not comprehensively address the leading causes of neonatal mortality (prematurity, asphyxia and infection) as priority Reproductive, Maternal, Newborn and Child Health (RMNCH) interventions.
- Lack of MoH district-level focal person for RMNCH. Unavailability of terms of reference for district-level coordinators in RMNCH.
- Weak coordination between national- and district-level RMNCH programmes.
- A birth registration policy is in place but still faces challenges for a countrywide rollout.
- Very few newborn indicators on the HMIS system.
- Poor accountability for newborn health at all levels: nobody is accountable for newborn deaths; there are no established perinatal death audits.
- No policy on quality improvement is in place.

2.2 Health financing

Malawi operates a free public health system for all. However, the major challenge is that the health sector is grossly underfunded by the Government, and relies on external donors to thrive. Eighty-nine per cent of the health sector is funded externally by donors. The challenges with health care financing are evident in the frequent stock-outs of essential supplies.

2.3 Health care work force

Malawi has a national human resource policy to address Maternal and Newborn Health (MNH) needs which include midwifery personnel and community health care providers. Malawi has increased the production of health care workers but the numbers are still very low. Other challenges include poor strategies for staff retention, poor definition of primary health care levels, inadequate investment to increase the number of health workers and inequity in staff deployment, particularly among hard to reach populations.
2.4 Essential medical products and technologies
A national coordination mechanism is in place with a technical working group meeting quarterly. Terms of reference and measures of accountability have to be better defined. Challenges include the absence of quantification at health centres, poor forecasting and procurement planning, chronic stock-outs and inadequate generation and use of data.

2.5 Health service delivery
The following bottlenecks were identified:

- Supervision is underfunded and not systematically implemented.
- There is limited availability of newborn care services in health facilities, especially for the sick newborn, including in labour and delivery complications.
- Quality of newborn care is poor in health facilities and lacks inadequate guidelines and/or poor adherence to standard practices.
- Major gaps remain in the utilization of key newborn survival interventions by groups (economic, geographic, educational status).
- There is no accountability system in place.

2.6 Health information systems
Challenges identified with the health information systems are the following:

- Ineffective data use and validation systems at point of generation
- Limited newborn indicators in the routine HMIS system
- Undeveloped surveillance and response guidelines for newborns
- Lack of data collection systems in both private for-profit and non-profit facilities.

2.7 Community ownership and partnership
The challenges in community involvement include harmful cultural beliefs that prevent seeking care for sick newborns particularly during the first seven days of life, and beliefs that do not value and honour the life of a newborn especially low birth weight or preterm babies.

CHAPTER 3. MALAWI’S EVERY NEWBORN ACTION PLAN
Every Newborn: An Action Plan to End Preventable Deaths is a road map for change. It takes forward the Global Strategy for Women’s and Children’s Health by focusing specific attention on newborn health and identifying actions for improving their survival, health and development. The process started from consultations with stakeholders to gain a better understanding of the context and specific bottlenecks for scale-up. Every Newborn brings together this country learning with the latest global available knowledge on effective interventions and delivery approaches, enabling policy makers and programme managers to take action to accelerate progress. It sets out a clear vision, supported by mortality targets for 2035 and other interim targets, outlining strategic actions, innovations and opportunities, sharing evidence on costs and impact of interventions, and setting out roles for all actors.

ENAP focuses on newborns in Malawi, identifying what actions are necessary to realize the right to survival and well-being. Every Newborn builds on the recommendations of Committing to Child Survival: A Promise Renewed for Child Survival (APR), and will contribute towards the APR target of 20 or less under-five deaths per 1,000 live births.
in each country by 2035. The plan also takes to action the recommendations of the United Nations Commission on Lifesaving Commodities for Women's and Children's Health, the goals of the Family Planning 2020 initiative and the United Nations Commission on Information and Accountability for Women’s and Children’s Health.

Ensuring the survival of preterm babies and their mothers requires sustained and significant planning, resources and practical support. The global efforts have shown that simple tools exist but efforts and mechanism to accelerate improvement in newborn survival have been lacking. We know what to do to change the future of babies born too soon, have trouble breathing at birth, or fall ill soon after birth and this will have a lasting impact for their mothers, families, and indeed for the entire country.

ENAP will strengthen the continuum of care for women and children along two dimensions. It will promote effective interventions throughout the life course and call for evidence-based actions at all levels of health service delivery, from community-level to referral-level hospitals. It will address the social determinants of health, promoting intersectoral actions, and stimulating innovation and research. Within the broad menu of all that is possible and needed to improve newborn health, the plan will put a spotlight on those interventions and actions that have potential to make the greatest impact. The 24 hours around childbirth are a unique window for investment with a triple return: to save the lives of women, prevent stillbirths and give newborns a healthy start in life. In addition, interventions before and during pregnancy and in the postnatal period beyond the first days of a baby’s life can significantly contribute to improvements in newborn health.

ENAP will contribute to the harmonization of approaches across RMNCH programmes between all concerned stakeholders in the country. It will build on the momentum and opportunities at hand, such as the Sexual and Reproductive Health Rights Strategy, The Road Map to Accelerated Reduction of Maternal and Newborn Morbidity and Mortality and the Health Sector Strategic Plan. It is developed keeping in mind that the implementation of strategies in these documents will significantly contribute to the reduction of newborn deaths. It is intended to specifically highlight newborn focused interventions, while endorsing those in the above mentioned national documents as parts of the effort.

### 3.1 Linkages with other initiatives and targets

Every Newborn will link with other country plans and initiatives in Malawi such as:

- Youth Friendly Health Services
- Safe Motherhood Initiative
- Integrated Maternal and Newborn Health
- Community Based Maternal and Newborn Care
- Prevention of Mother to Child Transmission of HIV
- Expanded Programme for Immunization
- Integrated Management of Childhood Illnesses and Community Case Management
- Young Child and Infant Feeding
- School Health and Nutrition
- Scaling Up Nutrition
- WASH
- Family Planning Initiative
3.2 Guiding principles for the Malawi action plan
The Malawi action plan relies on five guiding principles:
(a) **Country leadership**: The MoH has the primary ownership and responsibility for establishing good governance and providing effective and quality RMNCH services. Community participation is a key feature of such leadership as it is one of the most effective transformational mechanisms for action and accountability for newborn health. Development partners should align their contributions and harmonize actions.

(b) **Integration**: Providing every woman and newborn with quality care requires integrated service delivery which requires that multiple programmes coordinate their health system approaches. Stakeholders and initiatives across the continuum of RMNCH services are essential, without losing the focus on newborn-specific content.

(c) **Equity and Equality**: Equitable and universal coverage of high-impact interventions, and a focus on reaching the most vulnerable and poorest population groups are central to realizing the right of every woman and every newborn and child to good health.

(d) **Accountability**: Transparency, oversight and accountability are prerequisites for equitable coverage, quality of care and optimal use of resources.

(e) **Innovation**: Evidence has been accumulating over the past decade of which strategies broaden coverage of interventions for newborns and reduce mortality. Nevertheless, innovative thinking is needed about cost effective ways to reach the poorest and most underserved populations. Optimizing the application of knowledge of the most effective interventions and strategies still needs more research and development.

3.3 Vision
A Malawi in which preventable maternal and newborn deaths, stillbirths and disabilities are averted, childbirth is celebrated and babies thrive.

3.4 Goals
Achieve equitable and high-level coverage of quality essential interventions and commodities for maternal and newborn health and ultimately halving the NMR to 15 per 1,000 live births by 2035.

*Figure 3:* Projected levels of neonatal mortality rates in Malawi, 2014–2015
Table 1 shows the milestone targets for selected key interventions for newborn care to ensure achievement of the projected mortality rates in Malawi. Although not all these indicators are currently being collected, having baseline figures and instituting a mechanism for following on them will be among the initial activities in implementing this every newborn action plan.

**Table 1**: Malawi’s Every Newborn Action Plan targets

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<td>29</td>
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<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
</tr>
<tr>
<td>Fresh stillbirth rate</td>
<td>24</td>
<td>22</td>
<td>20</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td><strong>Coverage targets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of institutional deliveries</td>
<td>89</td>
<td>95</td>
<td>97</td>
<td>99</td>
<td>99</td>
</tr>
<tr>
<td>Initiation of breastfeeding within one hour of birth (%)</td>
<td>94.5</td>
<td>97</td>
<td>98</td>
<td>98</td>
<td>98.5</td>
</tr>
<tr>
<td>Women with preterm labour (&lt; 34 weeks gestation) receiving at least one dose of antenatal corticosteroids (%)</td>
<td>TBD</td>
<td>60</td>
<td>65</td>
<td>70</td>
<td>75</td>
</tr>
<tr>
<td>Babies born in health facilities with birth asphyxia received resuscitation (%)</td>
<td>TBD</td>
<td>85</td>
<td>90</td>
<td>95</td>
<td>97</td>
</tr>
<tr>
<td>Eligible Newborn with low birth weight / Prematurity managed With KMC at facility (%)</td>
<td>TBD</td>
<td>75</td>
<td>80</td>
<td>85</td>
<td>90</td>
</tr>
<tr>
<td>District hospitals with functional special care newborn units (%)</td>
<td>TBD</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>District hospitals conducting perinatal death audits (%)</td>
<td>TBD</td>
<td>50</td>
<td>65</td>
<td>75</td>
<td>100</td>
</tr>
</tbody>
</table>
3.5: Strategic intervention packages and target activities
A modelling exercise conducted for the recently launched *Lancet* Every Newborn series assessed the potential impact of scaling up evidence-based interventions within the health systems of high-burden countries. These interventions were grouped into six packages corresponding to the various life stages of newborns. It was estimated that high coverage of available intervention packages by 2025 could prevent almost three quarters of newborn deaths, one third of stillbirths and half of maternal deaths. The packages with the greatest impact on neonatal mortality (in decreasing order) include: Care during Labour and Childbirth, Care of Small and Sick Newborn, Care of Healthy Newborn especially in the first week, and Immediate Newborn Care. For the reduction of stillbirths, Care during Labour and Childbirth and Antenatal Screening for high-risk pregnancies/complications and their management are the two packages with the maximum impact (Bhuta et al, 2014)

Figure 4: Intervention packages in descending order of impact on neonatal mortality

1. Care during labour and child birth
2. Care of small and sick newborn
3. Care of healthy newborn
4. Immediate newborn care
5. Preconception and antenatal care

Following both the situational analysis and the bottleneck analysis on newborn health in Malawi, a set of strategies was developed using the *Lancet* Every Newborn series to help reach the goal for the action plan.

3.5.1 Strategy 1: Strengthen and invest in quality care during labour, delivery and neonatal period
Care during labour, delivery and the first week of life will be a key strategy because of its proven benefit in saving the lives of newborns and additional benefits for child survival, improved growth and the reduced risk of disability and occurrence of non-communicable diseases. Quality care during labour and childbirth and in the immediate postnatal period not only prevents the onset of complications, it also enables their early detection and prompt management. Malawi will be working to strengthen these
services to match the increasingly higher coverage of institutional deliveries with improved quality of care. This requires providing a complete package of Basic and Comprehensive Emergency Obstetric and Newborn Care in health facilities designated for the level of care. This also includes clean birth practices in health facilities, improving the use of a partograph for labour follow-up, antenatal corticosteroids in the management of preterm labour coupled with appropriate capacities for determining gestational age and proper management of maternal and neonatal complications, and the administration of antibiotics for prolonged premature rupture of membranes.

The provision of basic essential care for the newborn includes immediate and thorough drying, immediate skin-to-skin contact, delayed cord clamping, hygienic skin and cord care, initiation of breastfeeding in the first one hour as well as exclusive breastfeeding and the care of small and sick newborns throughout the neonatal period. The implementation, monitoring and follow-up of these interventions will be facilitated by an appropriate policy environment.

At the same time, community-level health services will be strengthened with a focus on promoting and supporting changes in household behaviours and practices including exclusive breastfeeding and care seeking for neonatal illness, with early detection and referral; as well as the promotion and strengthening of community-facility linkages and functional referral systems.

**Target interventions and activities**

The following are interventions aimed at improving care during labour, delivery and neonatal period of life in Malawi.

**Table 2: Interventions to strengthen care during labour and neonatal period**

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Community level</th>
<th>Health centre</th>
<th>District and central hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth preparedness</td>
<td>• Counselling and support for birth planning and emergency preparedness</td>
<td>All community-level care</td>
<td>All health-centre-level care</td>
</tr>
<tr>
<td>Delivery care</td>
<td>• Promotion of institutional delivery</td>
<td>All community-level care plus:</td>
<td>All health-centre-level care plus:</td>
</tr>
<tr>
<td></td>
<td>• Skilled birth attendance during labour and delivery</td>
<td>• Labour surveillance (including partograph)</td>
<td>• Induction of labour for prolonged pregnancy</td>
</tr>
<tr>
<td></td>
<td>• Labour surveillance</td>
<td>• Provision of Basic Emergency Obstetric and Newborn Care</td>
<td>• Caesarean section for maternal/foetal indication</td>
</tr>
<tr>
<td></td>
<td>• Early diagnosis of serious complications and timely referral</td>
<td>• Early diagnosis of serious complications and timely referral</td>
<td>(and blood transfusion)</td>
</tr>
<tr>
<td>Basic essential newborn care</td>
<td>• Postnatal home visit within 72 hours</td>
<td>All community-level care plus:</td>
<td>All health-centre-level care</td>
</tr>
<tr>
<td></td>
<td>• Promotion and support for thermal care</td>
<td>• Prevention of hypothermia:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Thermal care (immediate drying, warming, skin to skin, delayed bathing)</td>
<td></td>
</tr>
<tr>
<td>Management of pre-labour rupture of membranes and preterm labour</td>
<td>• Education on danger signs</td>
<td>Community-level care plus:</td>
<td>All health-centre-level care plus:</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>-----------------------------</td>
<td>-----------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>• Promotion and support for early initiation (within the first hour) and exclusive breastfeeding</td>
<td>• Pre-referral antibiotics for PROM</td>
<td>• Induction of labour</td>
<td>• Antibiotic management of PROM</td>
</tr>
<tr>
<td>• Promotion and support of hygienic cord and skin care</td>
<td>• Vitamin K and tetracycline eye ointment at birth</td>
<td>• Corticosteroids administration</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management of preterm and low birth weight babies</th>
<th>• Community awareness</th>
<th>All community-level care plus:</th>
<th>All health-centre-level care plus:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Education on danger signs</td>
<td>• Community leaders' engagement on the rights of the preterm baby</td>
<td>• KMC for preterm and for &lt; 2,000g babies</td>
<td>• Prophylactic and therapeutic use of surfactant to prevent respiratory distress syndrome in preterm babies</td>
</tr>
<tr>
<td>All community-level care plus:</td>
<td>• Extra support for feeding the small and preterm baby</td>
<td>All health-centre-level care plus:</td>
<td></td>
</tr>
<tr>
<td>• Prophylactic and therapeutic use of surfactant to prevent respiratory distress syndrome in preterm babies</td>
<td>All health-centre-level care plus:</td>
<td>• Comprehensive HIV care</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prevention and management of HIV including Prevention of Mother to Child Transmission</th>
<th>• Promotion of HIV testing and prevention</th>
<th>All community-level care plus:</th>
<th>All health-centre-level care plus:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• HIV counselling and testing</td>
<td>• Initiation of ART to pregnant and delivering women</td>
<td>• Initiation of prophylactic ARVs in babies born to HIV infected mother</td>
<td>• Continuous positive airway pressure (CPAP) to manage babies with respiratory distress syndrome</td>
</tr>
<tr>
<td>All community-level care plus:</td>
<td>• Case management of neonatal sepsis, meningitis and pneumonia</td>
<td>All health-centre-level care plus:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Care of the sick newborn</th>
<th>• Promotion/education on danger signs</th>
<th>All community-level care plus:</th>
<th>All health-centre-level care plus:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Early detection/referral</td>
<td>• Initiation of antibiotics and referral</td>
<td>• Case management of neonatal sepsis, meningitis and pneumonia</td>
<td>• Case management of neonatal sepsis, meningitis and pneumonia</td>
</tr>
</tbody>
</table>

Activities meant to strengthen and invest in care during labour, delivery, the first day and the first week of life:

1. Strengthening competencies for childbirth care including through strengthened pre-service and tailored in-service trainings, regular supportive supervision and mentorship of the facilities with the inclusion of medical/nursing teaching institutions and professional associations
2. Increasing the number of skilled staff working in these facilities
3. Providing and maintaining the necessary equipment and supplies
4. Developing Continuous Professional Development modules by professional associations and regulatory bodies aimed at enhancing competencies and skills of all staff
5. Instituting monthly maternal and perinatal death audits
6. Updating guidelines on the use of antenatal corticosteroids in the management of preterm labour
7. Training health workers and introducing the use of antenatal corticosteroids in preterm labour: start with six districts in June 2015, aiming for all district hospitals by December 2015
8. Distributing available protocols on use of antibiotics for cases of prolonged PROM
9. Establishing infection prevention procedures in all facilities conducting deliveries
10. Improving referral system at all levels of health care
11. Building capacity of SBAs in Essential Care for Every Baby through trainings and mentorship; start conducting the trainings in 11 districts by June 2015
12. Reintroducing routine administration of vitamin K to all newborns by December 2015. Advocating for procurement, consistent supply, inclusion of vitamin K on the essential drug list and availability of vitamin K in all facilities
13. Reinforcing the 48-hour stay in the postnatal ward
14. Developing and introducing neonatal guidelines and protocols including integrated supervision tools for newborn care by June 2015
15. Establishing sick newborn care units in all districts by 2017
16. Strengthening the laboratory systems in all district hospitals to better support diagnostics for the sick newborn
17. Introducing the use of performance-based incentives to enhance the quality of care provided by skilled personnel.

3.5.2 Strategy 2: Ensuring that every newborn is counted: measurement, programme tracking and accountability

Vital statistics provide indispensable information, in this case making policies more effective and responsive to the needs of women and children. The government of Malawi and its partners are working together to promote and ensure accountability for commitments to end preventable newborn deaths, in line with the recommendations of the Commission on Information and Accountability for Women’s and Children’s Health.

**Target activities**

1. Develop key newborn indicators and benchmarks of service delivery, policy and financing. This will be done through the Central Monitoring and Evaluation Department and efforts will be made to ensure that newborn indicators are included in HMIS and DHIS 2.
2. Revise all data collecting tools for monitoring newborn care, ensuring that they are harmonized with HMIS and DHIS 2.
3. Strengthen the health information system to track progress across newborn care and RMNCH.
4. Build the capacity of managers and all staff at all levels in the health care system to use their data to improve services. Introduce data validation mechanisms at each level of care by empowering the District Health Management Team (DHMT) to use the existing Data Quality Assurance tools.
5. Institutionalize and promote birth and death registration at all levels of care. MoH to collaborate with relevant ministries to establish a reliable process of birth and death registration.
7. Improve data management at community level through scale-up and updating of village health registers to ensure that newborn health indicators are included.
8. Scale up community-based surveys to improve maternal and newborn health outcomes by building capacity of Community Action Groups (CAGs) and all relevant community structures to conduct community household surveys.
9. Introduce Monitoring and Evaluation (M&E) of MNCH at community level by orienting the community on the score card approach and working with the community and the facilities to conduct score card sessions.
10. Roll out the use of RMNCH score card to all districts.

3.5.3 Strategy 3: Strengthening Advocacy, Communication and Social Mobilization and Other Community-Based Interventions
The current health sector strategic plan has recognized health promotion as an important component in the delivery of the essential health package. Addressing the cultural practices and beliefs that have been identified as barriers to effective maternal, newborn and child health service delivery and beliefs in various communities that do not value and honour the life of a newborn especially low birth weight and preterm babies will be priorities. Education and information are key to empowering parents, families and their communities to demand quality care. Evidence has shown the power of engaged community leaders, women’s groups and community workers in turning the tide for better newborn outcomes. The success of most interventions is dependent on community involvement.

Target activities

Behavioural Change Communication
1. Engage Health Promotion Department to audit the quality of existing newborn Behavioural Change Communication materials.
2. Produce newborn Behavioural Change Communication materials (counselling cards, newborn posters, billboards, KMC brochures).
3. Develop, revise and distribute job aids for community health workers.

Community mobilization
1. Map available structures on community mobilization.
2. Facilitate and expand community learning and action on MNH utilizing the community action cycle.
4. Mobilize the community to participate in community audits and verbal autopsies.
5. Conduct open days at Traditional Authority level on newborn health issues.
6. Conduct household visits (Health Surveillance Assistants, care groups).
7. Utilize available community drama groups to disseminate information of MNH messages.
8. Identify male champions/male motivators to reach out to other men on SRHR with special focus on the newborn.
9. Use community leadership to support community newborn care led initiatives.
10. Establish or increase the number of community radio listening clubs.
11. Foster male involvement in RMNCH issues.
12. Promote social accountability through engagement of Civil Society with community members and health service providers.

Advocacy
1. Conduct Area Development Committee meetings to improve awareness on newborn health issues.
2. Establish/strengthen District Health Promotion Subcommittees (under DEC) to scale up newborn health promotion.
3. Engage and train the media in the dissemination of information on newborn issues.
4. Identify and support national champions for newborn health.
5. Review the communication strategy to include newborn health.

Capacity-building
1. Invest in training and deployment of community health workers as a powerful resource for improving maternal and newborn care.
2. Train more community nurses and implement the deployment policy for community nurses.
3. Provide adequate resources (including job aids, mentorship, supplies and equipment) for community health workers.
4. Institute supportive supervision and mentorship programme for community health workers.
5. Train local leaders on MNCH issues so that they can provide leadership and oversight in their communities.
6. Train community-based organizations such as women groups or community action groups, village health committees and health advisory committees in maternal and newborn health issues.

3.5.4 Strategy 4: Reach every woman and every newborn to achieve equity and quality in universal coverage
Active efforts will be undertaken to narrow the gaps in access to and utilization of key newborn survival interventions.

Target activities
1. Reduce financial barriers for MNH services and institute financial protection mechanisms by improving Public Private Partnerships and initiating new service-level agreements targeting MNH and strengthening existing ones.
2. Ensure access to and/or availability of facilities with skilled staff in hard to reach areas.
3. Insist on and make use of disaggregated data to show progress in narrowing gaps and in planning for interventions, including resource allocation.

3.6 Research priorities
Malawi recognizes that health research provides an evidence base to inform policy formulation and programme implementation. However, due to inadequate capacity and resources, not much research has been done in newborn health care. Therefore, the country realizes that it can benefit from research done in-country and in other countries with a similar context in the following areas: finding approaches to scale up simplified newborn resuscitation at lower levels of the health system; identifying and managing newborn infection at primary facilities; evaluating and addressing barriers in the scaling up of exclusive breastfeeding and facility-based KMC; evaluating chlorhexidine cord care for neonates born in health facilities; and developing strategies to improve quality of facility-based care provided during labour and child birth.

Community participation in newborn research is crucial so that communities understand barriers that exist within their environment and identify solutions for them.

3.7 Managing the Malawi Newborn Action Plan
The MoH shall have ultimate responsibility of the plan. However, implementation of the action plan will require participation of different stakeholders: government, policy makers, development partners and other multilateral organisations, civil society and health workers on the ground. The Safe Motherhood committee working hand in hand with the Reproductive Health Directorate will provide oversight and track progress of the newborn action plan.

3.8 Monitoring and Evaluation
The action plan will review and use the existing M&E frameworks for RMNCH within the SRH strategic documents to ensure process and outcome indicators are tracked at all levels. The Malawi Newborn Action Plan has the ultimate goal of halving neonatal mortality by 2035. It is therefore paramount that progress is tracked and this will require measurable indicators. It is also important that national-level milestones are outlined so as to keep track of the plan. Besides ensuring that the key newborn care indicators are included in the national Health Management Information System system, a sound plan for M&E needs to be instituted. Availing of appropriate data collection tools and registers at all levels is a basic requirement. Innovative ways to gather information, including the use of mobile technology, should be promoted.

The action plan will build the capacity of health workers and other relevant stakeholders to monitor and evaluate programme implementation. Part of the effort will also be the promotion and strengthening of the system for birth and death registration, the documentation of stillbirths and the institutionalization of regular perinatal death audits.

Table 3: Monitoring milestones in the Malawi Newborn Action Plan (2015–2020)

<table>
<thead>
<tr>
<th>Year</th>
<th>National milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 2015</td>
<td>National launch of the Malawi Newborn Action Plan</td>
</tr>
<tr>
<td>December 2015</td>
<td>Production and dissemination of the newborn guidelines and protocols in all district hospitals / tertiary facilities</td>
</tr>
</tbody>
</table>
Table 4 below outlines the indicators that will be used in monitoring the Malawi action plan.

Table 4: List of indicators for interventions in the Malawi action plan

<table>
<thead>
<tr>
<th>Number</th>
<th>Indicator</th>
<th>Means of verification</th>
<th>Frequency of collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMPACT</td>
<td>Neonatal mortality rate</td>
<td>Surveys</td>
<td>Every 5 years</td>
</tr>
<tr>
<td></td>
<td>Stillbirth rate</td>
<td>Surveys</td>
<td>Every 5 years</td>
</tr>
<tr>
<td></td>
<td>Mortality rate in low birth weight babies (disaggregated by birth weight groups)</td>
<td>Facility surveys</td>
<td>Every 2-3 years</td>
</tr>
<tr>
<td></td>
<td>Fresh stillbirth rate</td>
<td>Facility surveys</td>
<td>Every 2-3 years</td>
</tr>
<tr>
<td>Inputs</td>
<td>Percentage of district hospitals with neonatal guidelines and protocols available</td>
<td>Facility surveys</td>
<td>Every 2-3 years</td>
</tr>
<tr>
<td></td>
<td>Percentage of health workers in maternity units trained in Essential Newborn Care</td>
<td>Facility surveys</td>
<td>Every 2-3 years</td>
</tr>
<tr>
<td>Objective 1: Strengthen and invest in care during labour, delivery, first day and week of life</td>
<td>Facility surveys</td>
<td>Every 2-3 years</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Proportion of newborns who received all five elements of Essential Newborn Care; Quality of Care (INDEX)</td>
<td>Facility surveys</td>
<td>Every 2-3 years</td>
</tr>
<tr>
<td>2</td>
<td>Proportion of newborns delivered at a health facility receiving chlorhexidine for cord care</td>
<td>Facility surveys</td>
<td>Every 2-3 years</td>
</tr>
<tr>
<td>3</td>
<td>Percentage of institutional deliveries</td>
<td>Facility Reports</td>
<td>Monthly</td>
</tr>
<tr>
<td></td>
<td>Percentage of deliveries by an SBA</td>
<td>Facility Reports</td>
<td>Monthly</td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------</td>
<td>-----------------</td>
<td>---------</td>
</tr>
<tr>
<td>5</td>
<td>Percentage of preterm births</td>
<td>Facility Reports</td>
<td>Monthly</td>
</tr>
<tr>
<td>6</td>
<td>Caesarean section rate</td>
<td>Facility Reports</td>
<td>Monthly</td>
</tr>
<tr>
<td>7</td>
<td>Percentage of women with preterm labour (&lt;34 weeks) receiving at least one dose of antenatal corticosteroid</td>
<td>Facility surveys</td>
<td>Every 2-3 years</td>
</tr>
<tr>
<td>8</td>
<td>Percentage of newborns at health facility receiving vitamin K at birth</td>
<td>Facility reports</td>
<td>Monthly</td>
</tr>
<tr>
<td>9</td>
<td>Percentage of low birth weight babies</td>
<td>Facility Reports</td>
<td>Monthly</td>
</tr>
<tr>
<td>10</td>
<td>Percentage of district hospitals with functional special care newborn units</td>
<td>District Health Office reports</td>
<td>Yearly</td>
</tr>
<tr>
<td>11</td>
<td>Percentage of postnatal mothers who stayed for 48 hrs in the facility</td>
<td>Facility surveys</td>
<td>Every 2-3 years</td>
</tr>
<tr>
<td>12</td>
<td>Percentage of newborns with birth asphyxia resuscitated successfully</td>
<td>Facility Reports</td>
<td>Monthly</td>
</tr>
<tr>
<td>13</td>
<td>Percentage of babies less than 2,500g receiving KMC</td>
<td>Facility Reports</td>
<td>Monthly</td>
</tr>
<tr>
<td>14</td>
<td>Percentage of newborns weighed at birth</td>
<td>Facility surveys</td>
<td>Every 2-3 years</td>
</tr>
<tr>
<td>15</td>
<td>Cause specific neonatal mortality</td>
<td>Facility surveys</td>
<td>Every 2-3 years</td>
</tr>
</tbody>
</table>

**Objective 2: Count every newborn: measurement, programme tracking and accountability**

|   | Percentage of district hospitals conducting perinatal death audits | DHO Reports | Yearly |

**Objective 3: Strengthening Advocacy, Communication and Social Mobilization and other Community-Based Interventions**

<table>
<thead>
<tr>
<th></th>
<th>Proportion of communities with community mobilization structures for promoting optimal MNH practices</th>
<th>Surveys</th>
<th>Every 2-3 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Proportion of media houses involved in MNCH</td>
<td>Surveys</td>
<td>Every 2-3 years</td>
</tr>
</tbody>
</table>

**Objective 4: Reach every woman and every newborn to achieve equitable and quality universal coverage**

<table>
<thead>
<tr>
<th></th>
<th>Vacancy rate for SBAs</th>
<th>Surveys</th>
<th>Every 2-3 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Disaggregated data on newborn care indicators (economic, geographic, educational)</td>
<td>Surveys</td>
<td>Every 3-5 years</td>
</tr>
</tbody>
</table>
REFERENCES


Lawn, J.E., et al. 2013. "Beyond newborn survival: the world you are born into determines your risk of disability-free survival." *Pediatric Research* 74(1).


APPENDICES

I. Bottleneck analysis for newborn care in Malawi

SECTION I: QUESTIONS TO IDENTIFY HEALTH SYSTEM BOTTLENECKS
APPLICABLE TO ALL NEWBORN INTERVENTIONS

For each of these questions described below, please conduct an in-depth analysis of your answer and provide detailed explanations (reasons) to back up your response.

1. LEADERSHIP AND GOVERNANCE

1.1 Does the national RMNCH strategy identify averting neonatal deaths and improving newborn health, in general, as a priority?
- Is there a situation analysis of newborn health? If not, why?
- Is there a baseline figure for the NMR?
- Is there a specific target for NMR and/or early NMR? By which date?
- Have different documents such as RH strategy, Child Health Strategy

Response:
- We have SRH and Child Health Strategy and not the RMNCH
- Situation analysis: we have been doing it and the most recent one is underway
- Yes we have a baseline figure of the neonatal mortality
- Targets for NMR in NSRHR Strategy

1.2 Does the national RMNCH strategy identify and address the leading causes of neonatal mortality (prematurity, asphyxia, infection) as priority RMNCH interventions? If not, why?

Response:
The road map does not comprehensively address the leading causes of neonatal mortality (prematurity, asphyxia, and infection) as priority RMNCH interventions; prematurity and neonatal sepsis does not feature clearly
1.3 Is there an MoH focal person for newborn health? If not, why?
Specify the department(s) in which the person is located. Even if there is just one focal person please assess whether this is sufficient to cover national needs. Summarize the current challenges. How about at the district level, are there focal persons?
Response:
Yes, MoH has three focal persons for MNH.
- This person is not sufficient to cover national needs.
- Bottleneck: One person cannot support all districts, newborn needs to be scrutinized and roles clearly delineated, little coordination on the case management of newborn cases as is done by another dept. Terms of reference to be developed at all levels from national to district. Recommend a task force to define RMNCH needs, the current status and the way forward.

1.4 Is there a functional national coordination mechanism/ technical working group/ national steering committee addressing newborn health? If not, why?
If yes, list key stakeholders, describe the regularity of meetings, specifically meetings on reviews of progress on newborn health.
Response:
1.1 Functional national coordination mechanism addressing newborn health – yes, but we have too many with no single forum where we bring them all together (MNH, CH, Nutrition, EPI, PMTCT etc.). Meetings are done quarterly.

1.5 Does the country have a birth registration policy? If no, why?
If yes, is the birth registration policy mandatory? Is the birth certificate free of charge?
Response:
A birth registration policy is in place but still facing challenges to roll out countrywide. Still have to go through the whole process to get an official registration, it is not mandatory, have to pay a fee for the registration to be done.

1.6 Are DHMTs able to take decision on planning and management of resources for newborn health? Please explain.
Response:
Yes, a DHMT is able to take decision on planning and management of resources for newborn health. Decentralization of authority is in place. Capacity for coherence and systematic analysis of gap is weak as is the issue of accountability – nobody is accountable for newborn deaths.

Please provide a summary of key bottlenecks.
Momentum has been gaining in getting the newborn issues prioritized over the past two years
- RMNCH Strategy needs to be developed
- MOH district level focal person needs to be established
- RMNCH coordination mechanism to link the different components need to be established
- Registration bottlenecks to be removed
- DHMT capacity for newborn planning to be improved

Overall assessment / rating
- Leadership and governance needs major improvement

After responding to the questions above, please make an overall assessment whether leadership and governance for newborn programmes is:
- Good (not a bottleneck to scale up)
- Needs some improvements (minor bottleneck to scale up)
- Needs major improvements (significant bottleneck to scale up)
- Inadequate (very major bottleneck to scale up)

2. HEALTH FINANCING
2.1 Describe the current national funding mechanisms for newborn health (programmes and commodities). What proportion comes from external/donor resources?
Response:
Current national funding mechanism for newborn health unable to discern in detail; grossly underfunded from government. Health sector is 89 per cent funded by external donors and newborn health is a small proportion of that.

2.2 Was a budget allocated for MNH services in 2011/2012? If yes, was it sufficient?
### Response:
Yes, budget was allocated for MNH services in 2011/2012 but was insufficient.

### 2.3 Is there a policy for free care at point of delivery for women and their newborns? If yes, please specify what it covers. Are there other national programmes (e.g., national funding schemes, voucher programmes) to facilitate free care? Please specify the funding source (government, donors, etc.)

**Response:**
Yes, there is a policy for free care at point of delivery for women and their newborns. It covers the whole RMNCH. Service Level Agreement from government. Management of Service Level Agreement that makes financial accessibility variable.

### 2.4 Do women usually have to pay extra fees (unofficial) in addition to the official fees? Please explain.

**Response:**
Services are supposed to be provided free of charge but due to shortage of resources may require clients to pay out of pocket fees.

### 2.5 Is there a results-based financing mechanism in place to rapidly increase access to maternal and newborn services to the most in need (poorest)? If yes, please briefly describe the mechanism, what is covered, and how widespread it is; mention regions or districts where this is in place.

**Response:**
Results-based financing mechanism in place on pilot basis (seven districts)

**Please provide a summary of key bottlenecks.**

<table>
<thead>
<tr>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>- There isn't systematic assessment of finance needs</td>
</tr>
<tr>
<td>- No explicit funding from partners or government on newborn health</td>
</tr>
</tbody>
</table>

**Rating:** Needs major improvements.

### After responding to the questions above, please make an overall assessment whether health financing mechanisms for newborn programmes are:

- [ ] Good *(not a bottleneck to scale up)*
- [ ] Needs some improvements *(minor bottleneck to scale up)*
- [ ] Needs major improvements *(significant bottleneck to scale up)*
- [ ] Inadequate *(very major bottleneck to scale up)*

### 3. HEALTH WORK FORCE

**3.1.** Does the country have a national human resource policy that addresses the needs of MNH *(please specify the name of the document and period)*

- Midwifery personnel for care at birth?
- Community health workers for home-based maternal and newborn care?
- Appropriate skill mix of personnel for facility-based care for sick newborns?

**Response:**
National human resource policy to address the needs of MNH is in place:
- Midwifery personnel for care at birth – yes
- Community health workers for home-based maternal and newborn care – yes, but numbers not adequate
- Appropriate skill mix of personnel for facility-based care for sick newborns – yes, but
3.2 Does the national human resource policy include the following strategies for scaling up childbirth and newborn care?

- Improving HR capacity (training and deployment, skill mix) for:
  - Midwifery personnel If yes, explain.
  - Nursing small and sick neonates If yes, explain.

- Financial mechanisms for:
  - Motivation and retention If yes, explain.
  - Incentivizing work in remote areas If yes, explain.

Response:
National HR policy includes the following strategies for scaling up childbirth and newborn care:

- Improving HR capacity for Midwifery personnel – yes
- Nursing small and sick neonates – yes
- Financial mechanism for motivation and retention – yes
- Incentivizing work in remote areas – yes

Application of the policy varies basing on availability of funds.

3.3 Please specify the following:
Is the current staffing situation sufficient? What are the percentages of unfilled posts for each category?

<table>
<thead>
<tr>
<th>Staff Complement</th>
<th>% Unfilled posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician density (number 0.2/10,000 population)</td>
<td>49%</td>
</tr>
<tr>
<td>Nurse density (number 3.7/10,000 population) (Nurse/Midwife)</td>
<td>26% (3,545)</td>
</tr>
<tr>
<td>Community worker density (number/10,000 population)</td>
<td>60%</td>
</tr>
</tbody>
</table>

Please provide a summary of key bottlenecks.

Summary
- Poor retention of staff strategies
- Poor definition of PHC level
- Inadequate production
- Inadequate investment to increase production
- Inadequate deployment

Rate: Inadequate

After responding to the questions above, please make an overall assessment whether human resources for newborn programmes is:

- Good (not a bottleneck to scale up)
- Needs some improvements (minor bottleneck to scale up)
- Needs major improvements (significant bottleneck to scale up)
- Inadequate (very major bottleneck to scale up)

4. ESSENTIAL MEDICAL PRODUCTS AND TECHNOLOGIES

4.1 Is there a national coordination mechanism for procurement and supply chain management? If yes, briefly describe the mechanism.

Response:
National coordination mechanism is in place. Technical Working Group meet quarterly. Terms of reference and accountability (i.e., responsibilities) have to be better defined.

4.2 Does the logistics management system include essential commodities for newborns? If yes, briefly describe the type (e.g., manual, enterprise software) and the furthest level the system can track (national,
regional, district, health facilities). Response: Yes, logistical management systems include the essential commodities for newborns. They track up to community level.

Please provide a summary of key bottlenecks.

Summary:
- There isn’t quantification in health centres.
- Poor focusing and procurement planning.
- Chronic stock outs.
- Inadequate data generation and use (All these affect RMNCH commodities)

Rating: Needs major improvements

After responding to the questions above, please make an overall assessment whether procurement and supply chain management of commodities for newborn programmes is:

- Good (not a bottleneck to scale up)
- Needs some improvements (minor bottleneck to scale up)
- Needs major improvements (significant bottleneck to scale up)
- Inadequate (very major bottleneck to scale up)

5. HEALTH SERVICE DELIVERY

5.1 Does the country have a national policy on quality improvement for MNH services? Please specify the name of the document. Response: We have a policy on quality assurance and not quality improvement: a generic and outdated one that addresses all health issues but none specific to MNH.

5.2 Are there systems for reviewing competencies and recertification of key personnel providing maternal and newborn care?

- Midwifery personnel *If yes, explain*

- Nursing small and sick neonates *If yes, explain*

Response: Systems for reviewing competencies of key personnel providing maternal and newborn care: Is there a generic one – CPD for both?
- Midwifery personnel
- Nursing small and sick neonates

5.3 Does the country have a system in place for routine supervision of (1) hospitals and (2) health facilities at:

- District level
- National level

Response: We have a system for routine supervision.
- District level
- National level
Please provide a summary of key bottlenecks.

**Summary**
- Supervision is underfunded and not systematically implemented
- Nothing for recertification but training manuals are in place
- No policy on quality improvement in place
- No accountability system in place

**Rating:** Needs major improvement

After responding to the questions above, please make an overall assessment of health service delivery for newborn programmes is:
- **Good** *(not a bottleneck to scale up)*
- **Needs some improvements** *(minor bottleneck to scale up)*
- **Needs major improvements** *(significant bottleneck to scale up)*
- **Inadequate** *(very major bottleneck to scale up)*

## 6. HEALTH INFORMATION SYSTEMS

### 6.1 In accordance with national legal requirements, are all foetuses and infants weighing at least 500 gms at birth (or 22 completed weeks or 25 cm crown-heel length), whether alive or dead, included in the national statistics?

- [ ] yes
- [ ] no

If no, please indicate which different criteria are being applied.

**Response:**
ALL foetuses weighing at least 500 gms at birth or 22 completed weeks whether alive or dead are included in the national statistics but are considered as abortions.

### 6.2 Does the country have a functional national health management information system (HMIS) in place (timeliness, completeness, accuracy, etc)? Please, explain.

**Response:**
Yes, we have a functional HMIS in place, it is timely, but there are challenges with regard to accuracy and the use of data.

### 6.3 Does the HMIS collect data relevant newborn health? Please indicate, if they include the following:

- Facility-based (early) neonatal mortality – **YES**
- Disaggregated by birth weight categories – **YES**
- Neonates protected at birth against neonatal tetanus – **YES**
- Proportion of newborns who started breastfeeding within one hour – **YES**
- Proportion of newborns receiving hepatitis B vaccination birth dose within 24 hours of birth – **NO**
- Proportion of newborns (0–1 month) exclusively breastfed – **NO**
- Others, please specify the indicators: community data – ANC/PNC home visits, breastfeeding, community maternal and newborn deaths, KMC, Helping Babies Breathe, danger signs for mothers and newborns. All HMIS data is based on health facility data.

For each indicator, please specify how they are collected and how frequently.

### 6.4 Does the country have a functional national system of accountability for reporting of progress in MNH and oversight in place (e.g., annual score card)? If yes, provide more details.

**Response:**
No annual score card is in place.

### 6.5 Does the country have a functional Death Surveillance Response mechanism? Please describe and specify if it covers maternal and perinatal deaths (including stillbirth and neonatal).

**Response:**
Functional Surveillance Response mechanism: for maternal death yes but not newborn deaths

### 6.6 Describe the validation mechanism system in place to ensure high quality of data reported.

**Response:**
<table>
<thead>
<tr>
<th><strong>Validation mechanism system not in place.</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>6.7 Are newborn data from private health care facilities available? At what level is the information compiled? Please explain the mechanism</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Response:</strong> Newborn data from private health care facilities: no</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Please provide a summary of key bottlenecks.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Response:</strong> Summary</td>
</tr>
<tr>
<td>- Data use and validation to improve all levels at point of generation</td>
</tr>
<tr>
<td>- Surveillance and response for newborns to be developed</td>
</tr>
<tr>
<td>- Accountability and score card to be developed</td>
</tr>
<tr>
<td>- Improve data collection from private both profit and not profit</td>
</tr>
</tbody>
</table>

Rating: Needs some improvements

<table>
<thead>
<tr>
<th><strong>After responding to the questions above, please make an overall assessment of the health information system for newborn programmes:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- <strong>Good</strong> (not a bottleneck to scale up)</td>
</tr>
<tr>
<td>- <strong>Needs some improvements</strong> (minor bottleneck to scale up)</td>
</tr>
<tr>
<td>- <strong>Needs major improvements</strong> (significant bottleneck to scale up)</td>
</tr>
<tr>
<td>- <strong>Inadequate</strong> (very major bottleneck to scale up)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>7. COMMUNITY OWNERSHIP AND PARTNERSHIP</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>7.1 Does the national RMNCH plan include demand generation/behaviour change communication initiatives? Or Does the country have a national communication and behaviour change strategy focusing on newborn health?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Response:</strong> We do not have the behaviour change strategy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Please provide a summary of key bottlenecks:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summary</strong></td>
</tr>
<tr>
<td>- Structures exist but need improvement</td>
</tr>
</tbody>
</table>

Rating: Needs some improvement

<table>
<thead>
<tr>
<th><strong>After responding to the questions above, please make an overall assessment whether community ownership and participation for newborn programmes is:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- <strong>Good</strong> (not a bottleneck to scale up)</td>
</tr>
<tr>
<td>- <strong>Needs some improvements</strong> (minor bottleneck to scale up)</td>
</tr>
<tr>
<td>- <strong>Needs major improvements</strong> (significant bottleneck to scale up)</td>
</tr>
<tr>
<td>- <strong>Inadequate</strong> (very major bottleneck to scale up)</td>
</tr>
</tbody>
</table>
## II. Sixteen interventions that can save newborn lives

<table>
<thead>
<tr>
<th>Time period</th>
<th>Intervention</th>
<th>Description and impact</th>
<th>Service delivery mode</th>
<th>Setting</th>
<th>Cause of death addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preconception</td>
<td>Folic acid supplementation</td>
<td>Daily intake of 400 µg through supplements or fortification reduces incidence of neural tube defects such as spina bifida and cleft palate by 72% (1-10% of neonatal deaths due to major congenital anomalies).</td>
<td>Outreach</td>
<td>Additional</td>
<td>Congenital anomalies</td>
</tr>
<tr>
<td>Antenatal</td>
<td>TT immunization</td>
<td>Two or three injections prior to or during pregnancy reduces incidence of neonatal tetanus by 80-95%.</td>
<td>Outreach</td>
<td>Universal</td>
<td>Tetanus</td>
</tr>
<tr>
<td></td>
<td>Syphilis screening and treatment</td>
<td>Screening and antibiotic treatment effectiveness depends on prevalence; appropriate in areas where syphilis rates are high.</td>
<td>Outreach</td>
<td>Universal</td>
<td>Infection/prematurity</td>
</tr>
<tr>
<td></td>
<td>Prevention of Pre-eclampsia and eclampsia</td>
<td>Calcium supplementation prevents pre-eclampsia and eclampsia, resulting in a one-third reduction in prematurity and LBW.</td>
<td>Outreach</td>
<td>Universal</td>
<td>Prematurity</td>
</tr>
<tr>
<td></td>
<td>IPT for malaria</td>
<td>Giving a curative treatment dose of an effective antimalarial drug at predefined intervals during pregnancy prevents up to one-third of neonatal mortality and one-quarter of perinatal deaths and reduces LBW by nearly half (among first and second pregnancies). Effectiveness estimates suggest that 10-20% of neonatal deaths due to serious infections may be averted.</td>
<td>Outreach</td>
<td>Situational</td>
<td>Infection</td>
</tr>
<tr>
<td></td>
<td>Detection and treatment of bacteriuria</td>
<td>Urinalysis during antenatal visits followed by antibiotic treatment for positive diagnoses avert 40% of cases of prematurity and LBW and 5-14% of deaths due to complications of prematurity.</td>
<td>Outreach</td>
<td>Additional</td>
<td>Prematurity</td>
</tr>
<tr>
<td>Intrapartum</td>
<td>Antibiotics for PPROM</td>
<td>Antibiotics (e.g. erythromycin) combat subclinical maternal infections and reduce serious neonatal infections by one-third, and neonatal deaths due to serious infections by 3-9%.</td>
<td>Clinical care</td>
<td>Additional</td>
<td>Infection</td>
</tr>
<tr>
<td></td>
<td>Corticosteroids for preterm labour</td>
<td>Maternal corticosteroids (e.g. betamethasone) injections during premature labour hasten development of foetal lungs and avert one-quarter to one-half of deaths due to complications of prematurity. Effectiveness estimates suggest that corticosteroids may avert 20-40% of deaths due to prematurity.</td>
<td>Clinical care</td>
<td>Additional</td>
<td>Prematurity</td>
</tr>
<tr>
<td></td>
<td>Detection and management of breech, multiple pregnancy</td>
<td>Caesarian section averts up to three-quarters of perinatal deaths among breech births.</td>
<td>Clinical care</td>
<td>Universal</td>
<td>Asphyxia</td>
</tr>
<tr>
<td>Intervention</td>
<td>Description</td>
<td>Source</td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>-----------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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<tr>
<td>Labour surveillance (including partograph) for early diagnosis of complications</td>
<td>Monitoring labour, particularly with the use of a simple chart (partograph) to indicate when intervention is needed, followed by appropriate care, averts up to 40% of perinatal deaths.</td>
<td>Daarmstad et al., <em>Lancet</em> 2008.</td>
<td></td>
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</tr>
<tr>
<td>Clean childbirth practices</td>
<td>At childbirth, clean hands, a clean birthing surface, nothing unclean in the vagina, a clean cord-cutting implement, and proper cord care prevent 10–20% of neonatal deaths due to serious infections and reduce deaths due to neonatal tetanus by approximately three-quarters.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Postnatal</td>
<td>Newborn resuscitation Resuscitating asphyxiated newborns using mouth-to-mouth, bag-and-mask, or tube-and-mask ventilation with positive pressure averts between one-quarter and one-half of neonatal deaths due to birth asphyxia.</td>
<td>Clinical care                              Universal</td>
<td>Asphyxia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breastfeeding</td>
<td>Immediate (within 1 hour after birth) and exclusive (no prelacteal feeds or other fluids/food) breastfeeding averts nearly 10% of all neonatal deaths.</td>
<td>Family/community care Universal</td>
<td>Infection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prevention and management of hypothermia</td>
<td>Maintenance of room warmth, immediate drying and wrapping, prompt recognition of hypothermia, and re-warming of hypothermic infants averts up to 40% of neonatal deaths.</td>
<td>Family/community care Universal</td>
<td>Infection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kangaroo mother care (LBW infants in health facilities)</td>
<td>Skin-to-skin contact between mothers and newborns, particularly LBW and/or preterm newborns, maintains warmth, encourages nursing, discourages over-handling, and enhances maternal recognition of newborn problems, reducing infection rate by about half.</td>
<td>Family/community care Universal</td>
<td>Infection in preterm/LBW infants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community-based pneumonia case management</td>
<td>Administration of antibiotics to children with pneumonia by community health workers reduces overall pneumonia mortality by an estimated 20–25%, and averts neonatal deaths due to serious infections by 20–55%.</td>
<td>Family/community care Universal</td>
<td>Infection</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>