Assessment of
Newborn Health in Myanmar
August - September 2013

Ministry of Health
Department of Health
Child Health Development Division

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unicef

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Abbreviations and acronyms

AIDS	Acquired immune deficiency syndrome
AMW	Auxiliary Midwife
ANC	Antenatal Care
ARI	Acute Respiratory Infection
BEmOC	Basic Emergency Obstetric Care
BHS	Basic Health Staff
BNC	Basic Newborn Care
CEmOC	Comprehensive Emergency Obstetric Care
CCM	Community Case Management
CIDA	Canadian International Development Agency
DHS	Demographic and Health Survey
DoH	Department of Health
DfID	Department for International Development
DMPA	Depot Medroxyprogesterone Acetate
CHW	Community Health Worker
DHS	Demographic and Health Surveys
EBF	Exclusive Breastfeeding
EPI	Expanded Programme of Immunisation
EmOC	Emergency Obstetric Care
ENC	Essential Newborn Care
GDP	Gross domestic product
GoM	Government of Myanmar
HA	Health Assistant
HIV	Human immunodeficiency virus
HMIS	Health Management Information System
HSCC	Health Sector coordination committee
HRH	Human Resources for Health
IEC	Information, Education Counselling
IYCF	Infant and Young Child Feeding
ITNs	Insecticide-treated bed nets (ITNs)
IMNCI	Integrated Management of Newborn and childhood illnesses
INGOs	International non-government organisations
IV	Intravenous
IGT	Intragastric feeding

JIMNCH	Joint Initiative on Maternal and Child Health
KMC	Kangaroo Mother Care
LHV	Lady Health Visitor
LBW	Low Birth Weight
MCHC	Maternal and child health centre
MDGs	Millennium Development Goals
MICS	Multiple Indicator Cluster Survey
MNH	Maternal and newborn health
MNCH	Maternal and Child Health
MoH	Ministry of Health
m-health	Mobile health
NGOs	Non-government organisations
NMR	Neonatal mortality rate
ODA	official development assistance
PCPNC	Pregnancy, Childbirth, Postpartum and Newborn Care
PHC	Primary health Care
PHS-2	Public health supervisor- 2
PMCT	Prevention of mother-to-child transmission of HIV.
pPROM	Preterm Premature Rupture of Membranes
PSBI	Possible Severe Bacterial Illness
RH	Reproductive Health
RMNCH	Reproductive, Maternal, Newborn and Child Health
RHC	Rural Health Centre
SRHC	Sub Rural Health Centre
SBAs	Skilled Birth Attendant
TBA	Traditional Birth Attendant
TSG	Technical Support Group
TT	Tetanus Toxoid
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's fund
UNOPS	United Nations Office for Project Services
USAID	United States Agency for International Development
WHO	World Health Organization
WCHD	Women, Child Health and Development

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Acknowledgement

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Last but not least, sincere thanks also goes to health volunteers and care takers who participated in the interview and contributed their perspective to make this assessment more informative and meaningful.

In all instances, people met showed great enthusiasm in contributing to this assessment and it is hoped that the results of this assessment will contribute for improvement of health systems in order to effectively deliver newborn care in Myanmar.

Please mind that the viewpoints expressed in this report are those of the independent international consultant and do not necessarily reflect the opinion of Government partners and UNICEF.

Executive Summary

Myanmar is a low income country in South East Asia undergoing many historic changes. Despite many complex challenges, the country has made good progress towards reducing preventable maternal and child deaths. However, further declines in child mortality will require strategic and focussed investments for newborn survival which is the key bottleneck towards achievement of 2015 targets for child survival. Neonatal mortality rate (NMR: 30 per 1000 live births now contributes to 47% of all under 5 deaths in Myanmar. The main killers of neonates in Myanmar include prematurity, birth asphyxia and sepsis. The NMR target for 2015 is to reduce NMR to 16 per 1000 live births i.e. a 54% reduction over the next two years. The national response towards newborn health has been encouraging with two pronged responses aimed at expanding both community and facility based newborn health interventions. However, in order to inform further improvements in neonatal health, the Department of Health under the Ministry of Health undertook a comprehensive review of the situation of newborn health with the support of UNICEF and partners in country in order to strengthen existing neonatal health initiatives; facilitate strategic planning, implementation and refinement of programme direction and actions.

This review of newborn health interventions utilised mixed methods: two semi-quantitative methods were utilised that used globally validated tools adapted for Myanmar; 1). Country readiness to scale up newborn health benchmarks tool and 2) the Maternal and Newborn Health Bottleneck analysis tool. These tools were applied over a series of workshops and meetings with Ministry of Health representatives, national experts and partners to accurately identify the situation of newborn health in Myanmar. A detailed literature review of all available literature around maternal and neonatal health was conducted. Qualitative methods included: key informant interviews, focus group discussions, field visits to Thaton and Kyaukpaduang townships and clinical observations at health facilities which allowed better understanding of the context and also helped to validate findings from the desk review.

There were many challenges identified for improving newborn health in Myanmar. Information on the determinants of newborn health is currently limited. The coverage of effective newborn health intervention across the country is low given the existing resource constraints. Health sector capacity is quite low especially for monitoring &supervision and most importantly the country needs to develop a well-functioning centralized procurement, logistics and supply chain system that is responsive to the needs on the ground. Quality of care for newborn health services at both facilities and communities needs to be improved considerably. For newborn care services at health facilities: this means developing appropriate standards for care, upgrading of existing health facilities, training, deploying and retaining trained health care providers at these facilities and creating an enabling environment for implementing evidence based standards into routine clinical practice. A nationally standardized community based package for newborn health interventions to be implemented jointly by all

partners does not exist at present, as a result of which there are many fragmented, diverse, small scale, project- driven initiatives that are operating across the country. A standardized community based newborn care programme with standard operational guidelines endorsed for nation-wide expansion by all implementing agencies with robust monitoring oversight would be very helpful in initiating a better coordinated national response. There is a need to consider allowing a permissive policy environment for volunteers (auxiliary midwives) in rural and hard to reach areas to dispense oral antibiotics and for midwives to provide injectable antibiotics would be good interim measures to consider while Myanmar produces enough Skilled Birth Attendants. There is also a need to implement the policy on use of tube/bag and mask for asphyxia management by volunteers (auxiliary midwives). Coordination, information sharing and planning amongst various line ministries, implementing partners and stakeholders is also another important challenge for leveraging a better collective response for newborn health in Myanmar. Training of skilled birth attendants on newborn care needs to be urgently scaled up in order to effectively implement evidence based standards during routine clinical practice across the country.

For the first time, Myanmar also has unprecedented opportunities to prioritise and scale up newborn health in the country. The health budget has reportedly increased fourfold and good advocacy on the cost-effectiveness of investments in MNH will lead to greater investments. As Myanmar opens up, there are many external development partners interested to work in-country and opportunities to leverage their expertise and financial resources are numerous. A number of surveys including a national census have been planned for early next year and these will provide data to better understand the situation and design effective targets and responses. A new strategic plan for newborn and child health development will help to ensure that newborn health is prioritised across the work of the Ministry. As telecommunications and internet facilities improve across the country, coordination and communication among central, state and regional level and township level will improve considerably leading to better planning and coordinated response.

This review focussed on identifying specific bottlenecks and solutions to scale up key high impact newborn health interventions that have the potential to save the greatest numbers of newborn lives in Myanmar. The assessment focussed on the following interventions: preterm/ low birth weight, normal delivery (including management of asphyxia), managing complications of childbirth and the postnatal period, normal postnatal care (immediate and beyond), prevention and treatment of infection and other cross-cutting and health system systems-related issues. Detailed discussion on the bottlenecks and strategies identified to overcome these bottlenecks for all individual interventions has been discussed in detail under the findings section of the main report. Overall, this review proposes a range of recommendations that have been grouped into two categories: Short term and long term. It is hoped that these

recommendations will help national authorities to make further strides in improving newborn survival in Myanmar. The review has fulfilled its overall objectives.

Recommendations:

Short Term Recommendations:

1. Integrate newborn action into existing RMNCH initiatives and efforts: This will be an easy first step to integrate newborn health across all existing plans, programmes and processes so that newborn health can be entry point for a better collective national response to RMNCH. This means incorporating newborn health messages, technical content, trainings, programmatic efforts and implementation standards across all programmes within the continuum of care for RMNCH. A detailed exercise should be undertaken to analyse the gaps across programmes, to explore in detail what is missing and to integrate the relevant technical content for newborn health.

2. Focus efforts on provision of appropriate care during labour, childbirth and the first days of life: This time period offers triple returns on investments and programmes targeting this time period should be prioritised by promoting safe, hygienic, institutional deliveries by skilled birth attendants and early post natal contacts (either at health facility or at home) with an emphasis on effective counselling during the early postnatal contact on healthy maternal and newborn care practices and behaviours. Increasing demand and improving access to quality institutional delivery services through innovative models will help in reducing preventable maternal and neonatal deaths.

3. Increase the capacity of the Child Health Working Group under the oversight of the existing MNCH TSG to function as technical expertise on newborn health with the responsibility of providing overall advisory, coordination and monitoring for the implementation of all neonatal health interventions in the country. This group will advise and ensure the overall technical quality of prevention, diagnosis and treatment strategies, approaches and interventions are appropriate for Myanmar and incorporate global evidence, emerging innovations and in-country experiences. This group will also oversee the finalization of a national community based package mentioned below.

4. Design, finalize and implement a nationally endorsed community based package that targets all the major causes of deaths in both mothers and newborns. Prioritise implementation of this package by all partners working in the country first targeting hard to reach and underserved areas of the country that have high burden of deaths. Ensure implementation strength by developing standard operational guidelines, a coordinated national plan for expansion and integrate CBNBC programme activities in all ongoing and upcoming opportunities for provision of

comprehensive MNCH services in the country. . Integrating this package of newborn interventions within all existing platforms and programmes that provide care for pregnant women, newborns and children will help to exponentially scale up newborn health interventions across the country.

5. Promote engagement of parents, families and communities: Education and information are key to empowering parents, families and their communities to recognise danger signs, seek early care for illnesses, increased institutional deliveries and demand quality care from the health system. All existing IEC materials should be reviewed for consistency of newborn care messages. They should use the same illustrations, tools and materials to communicate standard nationally endorsed messages. Participatory approaches using a variety of proven and effective programme communication methods including mass media should be used to create behaviour change and facilitate adoption of healthy maternal and newborn care practices.

6. Research: Further research into determinants of newborn health including causes of death, care seeking practices in communities, quality of care and health facility assessments should be undertaken in Myanmar. Rigorous evaluations of community based endeavors should be conducted. A rigorous evaluation framework should also be developed for the national community based programme once it is designed and piloted.

7. Refinement of the existing newborn health interventions:

    i. For newborn sepsis:
        a. In order to promote early treatment initiation, promote referral compliance and ensure that newborns with sepsis actually receive the care that they need. It is recommended that a permissive policy allowing midwives to provide Injectable antibiotics is provided and volunteers to dispense oral antibiotics is considered so that appropriate care for serious newborn illnesses can be provided in community settings using standard diagnostic and treatment algorithms and that treatment is provided free of charge. This should also be supported by increased investments in monitoring and supportive supervision so that high rates of treatment completion can be obtained and that volunteers and midwives are appropriately mentored.
        b. The diagnostic and treatment algorithm for assessment of newborn infections/ Possible Severe Bacterial Infections (PSBI) needs to be updated according to the latest global standards and implemented with a greater focus on community case management in zero to one month age group. The existing algorithm and the standards have also not been properly implemented esp. for community case management in zero to one month age groups.

ii. For Birth Asphyxia: Although, community based cadres such as AMWs still conduct a majority of deliveries in rural Myanmar, they are not authorised to perform neonatal resuscitation. Simple protocols for birth asphyxia management are available globally and there should be a permissive policy environment allowing AMWs to use bag and mask in cases of asphyxia esp. in rural or hard to reach areas of the country. Referral linkages and coordination with tertiary facilities should be improved for this to happen. Training quality improvement with an emphasis on skill building and clinical practicums using simulation models should be utilised to improve skills and confidence.

iii. Prematurity is a major cause of neonatal deaths in Myanmar but existing plans and strategies do not include specific actions to avert those deaths through prevention and management of preterm birth including administration of antenatal corticosteroids. Training packages and protocols should be modified and implemented to ensure that midwives and AMWs identify prematurity, initiate appropriate management and refer to facilities. Feasibility / operational research models testing the effectiveness of health care providers (e.g.: midwives) administering antenatal corticosteroids could be undertaken in the context of rigorous monitoring and research.

iv. LBW and KMC: Although, LBW and KMC are covered in detail as a part of the Integrated Management of Newborn and Childhood Illnesses package, specific national guidelines for prevention and management of LBW babies including KMC and feeding support should be considered as LBW is a significant burden in Myanmar. It is recommended that appropriate national implementation guidelines and standards for KMC in facility and community settings including feeding support for LBW infants is developed for Myanmar and implemented.

v. Cord Care: Given the revised WHO recommendations, it is recommended that based on the context esp. in rural areas with high rates of home deliveries, national authorities may wish to review the evidence on chlorhexidine and make a decision accordingly.

Long term Recommendations:

1. A national level mechanism for streamlining procurement, supply chain, logistics management and distribution systems need to be strengthened in Myanmar as a functional strategic pathway towards quality maternal and newborn health care for all. Designing an effective and sustainable supply chain system for drugs, commodities and supplies is of utmost importance to make further gains in MNCH outcomes in Myanmar.

2. Quality of care provided at facility and community levels is essential to prevent mothers and children dying in Myanmar. Competent health care providers, particularly skilled birth attendants, are an essential requirement for providing care for both the woman and her newborn. Investments must be made to ensure

that existing health workforce is properly trained, national standards and guidelines are developed, and disseminated, professional organizations are fully on-board with quality improvement initiatives. Government and partner efforts must ensure that health facilities are fully functional and the health workforce is well equipped and operate within the required policy framework to deliver high quality maternal and newborn care to the population that they serve.

3. Investment in monitoring and supportive supervision: It is important to have a robust monitoring system in place for monitoring national programme performance. Existing national HMIS systems must be strengthened. Any innovations introduced should have further stringent oversight. Utilising standardized indicators and developing performance targets can improve accountability and contribute to quality improvement of the system. Similarly, investing in the system to establish a functional supportive supervision system for community and facility based cadres will provide much needed support and will help to improve their individual performance. Annex six provides some suggested indicators for routine monitoring.

4. Creating a constituency around maternal and newborn health will make a huge difference to the progress on the ground and help generate leadership, political will and generate resources to expand intervention coverage. Examples from other countries for e.g.: HIV/ AIDS alliances, national White Ribbon alliance movements or safe motherhood networks have all shown exceptional results. Strong advocacy around healthy planned pregnancies for all, ensuring that all newborns make a healthy start in life and that they grow to fulfil their development potential will be important to mobilize political will, commitment and leadership to this issue. Further, at the local level, village leaders/ development committees should be more engaged in the process of implementation of the CBNBC initiative so that there is a lot of ownership and buy in from the start.

5. Finally, the ultimate aim should be to achieve universal coverage and equity in Maternal and Newborn health in Myanmar. Access to quality care during antenatal period, childbirth and postnatal period is marked by great inequities, affecting vulnerable and deprived populations, in both urban and rural settings in Myanmar. Closing this equity gap within population groups and areas of the country will ensure that many lives of mothers and newborns are saved in Myanmar.

1 Introduction

This review of newborn health interventions in Myanmar was done through a series of participatory, consultative workshops, key informant interviews, focus group discussions, field visits, clinical observation visits and utilized validated questionnaires for data collection around key maternal and newborn health interventions. This introductory chapter outlines how this document has been organized. The executive summary provides a concise summary of the entire review including the recommendations that were generated from this review. Chapter 2 of the document summarises the background and sets the country context of Myanmar. Chapter 3 looks at the situation of maternal and newborn health including some key determinants of newborn health in Myanmar. Chapter 4 outlines the global scenario, experiences and discusses some key global recommendations for improving newborn survival. Chapter 5 discusses the methodology that was used to conduct this review. Chapter 6 reports on the detailed findings of the review. The findings have been arranged according to the different instruments that were used for the data collection. All the findings documented here were obtained after extensive discussions and were noted only after obtaining consensus from the experts invited at the national consultative workshops. The first section highlights the findings from the readiness to scale up newborn care in Myanmar- benchmark analysis that was conducted. The second section then goes on to discuss the findings of the bottleneck analysis of newborn health interventions that was done. For all the key technical interventions, bottlenecks and strategies to overcome these bottlenecks have been discussed individually. Readers who would like to understand the situation of the key newborn health interventions in greater detail are encouraged to read specific sections on the various interventions outlined in chapter 6.2. Chapter 7 outlines the limitations of this review and chapter 8 then provides the overall recommendations that generated from this review. The recommendations have been grouped into short term and long term recommendations to outline some of the *'quick wins and easy fixes'*. Annexes have been placed in Chapter 9 and all the references have been provided at the end of the document.

2 Background

Socio-political context:

Myanmar is country in South East Asia bordering China, Lao People's Democratic Republic, Kingdom of Thailand, Bangladesh and India comprising of 7 states and 7 regions. Since the November 2010 elections, reforms have gradually been introduced across many sectors and the country context is changing quite rapidly. Today, Myanmar is in the process of a historic transition, moving from military, authoritarian rule to parliamentary democracy; negotiating ceasefires after a decades-long civil war between the government and armed non-state groups and shifting to a market-oriented economy. Each of these transitions presents opportunities and challenges to achieving sustainable development and inclusive growth for Myanmar.

It is estimated that the population of Myanmar is 57.5 million[1] and approximately 32% of the population live in urban areas.[2] The country is geographically and culturally diverse, with 135 groups speaking over 100 languages and dialects. [3] It is a predominantly agrarian with agriculture contributing to 50% of GDP, although the country also generates substantial revenue from the export of natural resources. Although, poverty has been declining steadily over the years, it is estimated that 25% of the population lives below the poverty line, with 5% living in extreme poverty (UNDP, 2011). Poverty is higher in rural areas (25%) than compared to the urban areas of the country (15%). Further, poverty is also unevenly distributed across the country's states and regions, with 73% of the population in Chin, 44% in Rakhine and over 30% in Shan, Tanintharyi and Ayeyarwady states and regions living below the poverty line. One third of the poorest people live in the densely populated Mandalay and Ayeyarwady regions.[4]

Health System context:

Government expenditure on health has increased three-fold between 2000–2001 and 2005–2006 in Myanmar, but total expenditure on health as a percentage of gross domestic product (GDP) was stagnant at around 2% across these years.[5] Notably, Myanmar has among the lowest government expenditures on health in the region: US$ 4 per capita in 2010.[6] In the 2011–2012 fiscal year, the government increased its expenditure on health to a level four times higher than in previous years. However, out of pocket expenses in Myanmar are among the highest globally, going from 99% in 2005 to 92% in 2010, constituting almost all of health expenditures in Myanmar.[7] The country received very low level of international financial assistance considering its development profile. Compared against other nearby Southeast Asian countries, Myanmar received the lowest level of official development assistance (ODA; US $ 338.84 million) in 2010, and ODA for health per capita was still the lowest compared to Cambodia and Lao PDR. Moreover, the ODA expended for health-related purposes in Myanmar went mainly toward MDG 6-related programs (67.5%), with only 8.6% going toward reproductive health and family planning, in 2009.[8] Such funding shortfalls are clearly reflected in Myanmar's health outputs in maternal and child health.

The Myanmar Health Vision 2030 is an ambitious 30-year plan that aims to address health challenges in Myanmar.[9] The National Health Policy (1993) focussed on a primary health care approach, producing sufficient as well as efficient human resources for health, expanding health services not only to rural but also to border areas, and augmenting the role of the private sector and non-government organisations (NGOs) in delivery of health care. The current National Health Plan (2011-2016), prioritises maternal, newborn and child health (MNCH), communicable diseases and health systems strengthening, as well as sector wide coordination.[10] Myanmar initiated a comprehensive health care approach since early 1950s through the rural health scheme. With the adoption of the rural health scheme, basic health staff mainly midwives became the backbone of the health system. With the implementation of 1st plan, the CHW training started since 1978 with an aim to have a trained CHW* in every village of the country to provide primary health care services. AMW training started in 1986 with an aim to have one AMW to cover two villages to provide Maternal and child health care.

The Ministry of Health is organised at three levels: central, state or region, and township level. The MOH has six departments, the largest of which is the Department of Health, which employs 93% of over 58,000 personnel and accounts for approximately 75% of MOH expenditure.[11] The Department of Health is responsible for the preventive, curative and rehabilitative services and for supervising health departments in the 7 regions, 7 states, 66 districts and 330 townships, as well as hospitals and clinics. Township health administrations serve a population of approximately 100,000-300,000 and are headed by a Township Medical Officer. Urban areas are served by Township Hospitals, Urban Health Centres, School Health Teams and Mother and Child Health Centres. In rural areas, Township Health Departments oversee 1-3 Station Hospitals and 4-5 Rural Health Centres. Each Rural Health Centre has 4-7 sub-centres. Sub-centres are intended to be staffed by a midwife and a public health supervisor (PHS 2), while outreach services are provided by midwives supported by volunteer community health workers and auxiliary midwives. There is a need to upgrade infrastructure and facilities at the RHC and the sub-center levels across the country. There is a strong culture of community based *donation giving* and community led initiatives that have led to the upgrading of existing or creation of new health facility infrastructure. The private sector is an important provider of health care in Myanmar and MOH and WHO reports indicate that the private sector provides 75-80% of ambulatory care.[12] The private sector includes private hospitals and private sector general practitioners, pharmacists and drugs sellers and also public sector health workers that run their own private clinics after hours. The private sector is a heterogeneous group and the quality standards are variable depending on the type of facility and the provider. †

The Myanmar Health Sector coordination committee (MHSCC) is the apex decision making body for the health sector in Myanmar. The MHSCC evolved from the well-established Country Coordinating Mechanism for the Global Fund and functions as a representative multi-stakeholder forum dealing with high level issues in the health sector and aims to meet the international principles for aid accountability. The Union Minister of Health chairs the MHSCC and a technical strategic group (TSG) has also been created for Maternal, Newborn and Child Health (MNCH).

† There are also many quacks that practice in the villages. Details on their levels of knowledge and skills are not known. Given that many women believe that taking a sick newborn such as a baby with sepsis to a health facility means prolonged stay for both the baby and the caretaker at the health facility and expenses for every day of hospitalization. Families generally tend to seek care in the private sector as clinics/ pharmacies will not admit the baby. In many instances, they will just approach their local village doctor/ quack for treatment even for serious newborn illnesses.

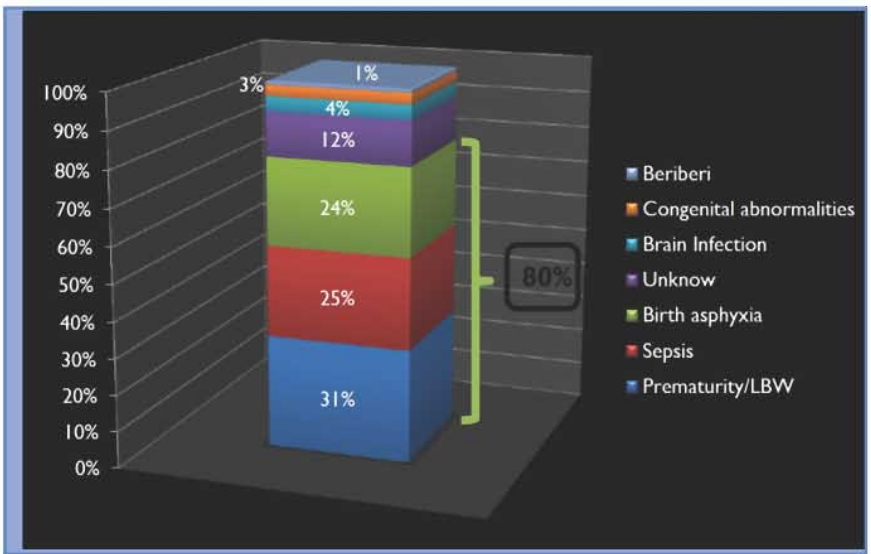
3 Maternal and Neonatal Health

Maternal and Neonatal health is an important priority for Myanmar as evidenced by the increasing importance given to this issue. The Ministry of Health through the Women and Child Health Development (WCHD) section has been quite progressive in dealing with the proportionate rise of neonatal mortality in the country. There is a five year strategic plan for child health and development (2010-2014) and also an implementation plan for delivering that strategy which includes newborn health components. At present the WCHD is also in the process of developing the next strategic plan for child health development and there is an excellent opportunity to prioritise newborn health into the national response. There are also a whole host of other national policies, plans and guidelines in Myanmar that affect newborn survival. Some of the important ones include: a national plan for the Expanded Programme on Immunization (EPI), a five year strategic plan for reproductive health (2009-2013). There are also national plans for food and nutrition, Infant and Young Child feeding, National strategy for Malaria and a 20 years plan for Malaria, strategic plan for Water and Sanitation, and a strategic and operational plan for HIV/ AIDS. New funds have also been committed by donors as a part of the 3MDG fund managed by UNOPS of approximately 300 million USD for five years which will support activities in selected townships. The MOH also leads a health system strengthening initiative (GAVI HSS) which prioritises MNCH issues and intends to cover 180 townships by 2014.

The Government of the Republic of the Union of Myanmar is fully committed to the Millennium Development Goals as a signatory to the MDGs, however, progress towards achieving the targets of both MDG 4 and 5 has been challenging. [13] Recently, the MOH has also announced commitments to the Global Strategy for Women and Children's Health with specific targets included to ensure: 80% antenatal care coverage; 80% of births attended by a skilled attendant; 70% access to emergency obstetric care; and 80% coverage for prevention of mother to child transmission of HIV and integration within MCH care, as well as commitments to universal childhood immunisation coverage, increased coverage of newborn care, increased contraception prevalence and reduced unmet need for contraception, to improve the midwife to population ratio from 1:5,000 to 1:4,000, and develop a new human resources for health plan for 2012-2015. [14]

Newborn Health in Myanmar:

Each year, amongst the 53,000 under five children that die in Myanmar – 43,000 of them younger than 1 month. Despite improvements, the country's under-5 and infant mortality rates are the highest among ASEAN member countries,[15] and the majority of these deaths are preventable. The latest estimates show that the neonatal mortality rate per thousand live births rate is 30 (2011) and that neonatal deaths contribute to 47% of all under 5 deaths (2011). The target for 2015 is to reduce NMR to 16 per 1000 live births. The principal causes of neonatal mortality (within 28 days of age) are prematurity, birth asphyxia and sepsis, including pneumonia. Deaths are most common in home-delivered babies in rural areas. The best available local evidence‡ is from the Nation-wide cause specific under five mortality survey conducted during 2002-2003, which showed that the majority of neonatal deaths (80%) were due to preventable causes such as prematurity/ low birth weight, sepsis and birth asphyxia. (See Fig 1 on Causes of neonatal deaths in Myanmar). Apart from the usual causes, infantile Beri Beri is also an important preventable cause of death amongst young children in Myanmar which primarily occurs in infants that are only fed breast milk and whose mothers are thiamine deficient mostly due to nutritional causes such as high consumption of foods containing thaminases such as white/ milled rice and anti-thiamine factors such as Chinese tea, coffee, and betel nuts. The stillbirth rate is 20 per thousand total births (2009).



Source: Nation-wide cause specific under five mortality survey, 2002-2003, DOH

‡ There is a lack of good quality data about the causes and the determinants of newborn health in Myanmar. These information gaps are likely to be closed soon given that the Myanmar will conduct its first ever Demographic and Health Survey in 2014 and that a national census will also take place in the country after more than 30 years.

There are many national and international partners working on newborn health in Myanmar. §They work mostly on Community based programmes in Maternal and Newborn Care, capacity building efforts through the training of basic health staff and health volunteers. They also support the MOH for coordination and partnership activities; support first level and referral level health facilities with training, drugs, equipment and supplies and also with aspects of service provision. Many of their projects are also focussed on providing training to midwives and volunteers for community based projects designed to improve knowledge and awareness on maternal, child health and nutrition. WCHD and UNICEF implement the Community Based Newborn Care project in 11 townships with plans to expand to 25 townships during this program cycle. Further details on the CBNBC programme are provided in the annex. Through, WHO support, IMNCI (11 days training) has already been rolled out in 24 townships of the country. Further, UNICEF and the MOH also implements IMNCI (modified 7 days training) for BHS and management of critically ill children including newborn and IMPAC for hospital staff in 200 townships. UNFPA supports the PCPNC trainings for midwives at the township level and 163 townships have already been covered. ENC training has already been provided in 74 townships (over ten years from 2003-2013). WHO is also working together with the MOH to develop standard treatment protocols for managing common newborn conditions at hospital level which will be extremely important to mainstream quality of care in routine clinical practices for newborn and child health. Table 1 outlines the different trainings provided for newborn care in Myanmar.

Partners also support a BEmOC training (5 day) below the station hospital level and a CEmOC (7 days) for doctors is also conducted regularly. One of the most active NGOs with networks across the country is the Myanmar Maternal and Child Welfare Association which works to promote the health and well-being of mothers and child through a range of programmes such as Maternity waiting homes, provision of refresher training courses for midwives, Seven Things this Year, do and don't training for TBAs, feeding programmes, birth preparedness counselling and they also run health clinics for mothers and children. They also have 133 training sites and an influential senior management team.

§ International partners include: UNFPA, UNOPS, World Health Organization, Relief International, Plan, Burnet Institute, PATH, Save the Children, Population Services International, International Office of Migration, Merlin, Medicine Du Monde, Marie Stopes International, and World Vision International. Notable national organizations and partners include: Myanmar Maternal and Child Welfare Association, Myanmar Health Assistants organization, Myanmar Christian volunteers organization, Myanmar Maternal and Child Welfare Association

TABLE 1: Trainings for newborn care provided by the MOH in Myanmar		
Facility based: PHC Level • UNICEF supported (200 townships) : Newborn care and child health (7 days, 2 for ENC) PCPNC (4 days training) for BHS • WHO supported (30 townships): ENC – (5 days) Referral Facility Level • UNICEF supported (200 townships): Management of critically ill children including newborn (4 days, 2 for critically ill newborn care) and IMPAC (4 days) for hospital staff • WHO supported (24 townships): Facility-IMNCI (5 days for hospital staff).	**Community based** • Community based newborn care (CBNBC) started in 5 townships in 2011 and expanded to 11 townships in 2012. • Health volunteers have to go visit homes for newborn care provision regardless of the place of delivery. • Normal baby – 3 visit (1,3,7 day) • Preterm/LBW – 5 visit (1,2,3,7,14 day)	**Pre-service trainings** • Integrated management of newborn and childhood illnesses (IMNCI) was integrated into pre-service curriculum of Midwifery courses • Facility based IMNCI was integrated into medical curriculum • Two 5 days courses for ENCC for Nursing & Midwifery teachers. (Sept & Oct 2009) • WHO Essential Newborn Care • manual integrated into curriculum of midwives/nurses

A simple mapping exercise was also conducted as a part of the review. The minimum standards for newborn health as recommended by the MOH in the Five year strategic plan for child health (2010-2014) was utilised as the benchmark for the mapping. The details regarding newborn health interventions implemented by partners working in the country has been provided in Annex One. This mapping only reflects the work of partner agencies and does not include information details of the MOH or the UN agencies. The mapping template included information on:

- Current activities in newborn health: Individual oriented clinical services (Township, station, RHC, SRHC)
- Home/Community Based Services: Community/Family Oriented Services, Outreach (population oriented scheduled services)
- Anticipated Activities (2014 onwards) and
- Planned Research activities

Table 2 below shows different newborn interventions by level in Myanmar. Newborn care services are provided by hospital staff at the referral level, by the Basic Health Staff at the PHC level and health volunteers at the community level. In addition, the WCHD also provides in-service and refresher trainings for BHS and hospital staff to provide newborn care services including the provision of basic equipment such as tube and mask for BHS and bag and mask and neonatal resuscitation set for hospital staff. However, this is limited only to 200 townships supported by UNICEF and does not include townships supported by other development partners.

Table 2: Newborn Care interventions in Myanmar

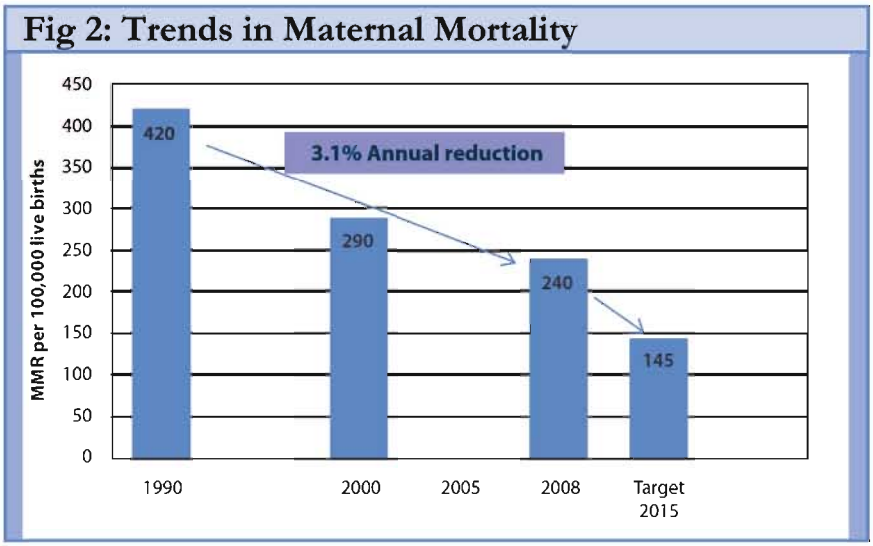
Newborn health interventions	Township	Station	RHC	SRHC	CB
Immediate essential newborn care (at the time of birth)					
1. Immediate thermal care	√	√	√	√	√
2. Initiation of EBF	√	√	√	√	√
3. Hygienic cord and skin care	√	√	√	√	√
4. Neonatal resuscitation	√	√	√	√	-
5. Newborn infection management					
(a) Case management of neonatal sepsis, and pneumonia	√	√	√	√	-
(b) Presumptive antibiotics therapy for newborn at risk of bacterial infections	√	√	-	-	-
(c) Management of NB with jaundice	√	√	√	√	-
6. Initiation of Anti-Retroviral Treatment in babies born to HIV infected mother	√	√	-	-	-
Interventions during antenatal and intranatal period					
7. Antenatal care package	√	√	√	√	√
8. Antenatal Corticosteroids for preterm births	√	√	-	-	-
9. Intranatal care package	√	√	√	√	-
10. Antibiotics for Premature Rupture of membranes	√	√	√	√	-
Interventions for small babies					
11. Kangaroo mother care for Preterm and LBW	√	√	√	√	√
12. Extra support for feeding small and preterm babies	√	√	√	√	√
13. Home visit for Newborn care by health volunteers					√

Determinants of newborn health:

Maternal Mortality:

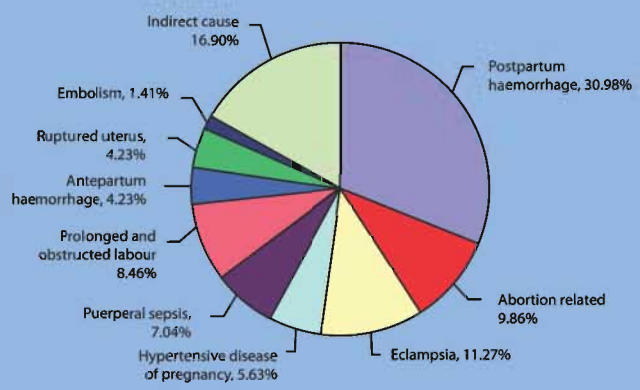
The immediate survival of the newborn is heavily dependent on the status of maternal survival and many maternal complications like pregnancy induced hypertension, anaemia etc., also result in neonatal complications. The latest UN interagency estimates indicate that the Maternal mortality Ratio (MMR) in Myanmar is 200 per 100, 000 live births.[16] According to previous estimates the MMR for the year 2008 was 240 ma-ternal deaths per 100,000 live births. [17] Fig 2 shows the trend in reduction of the MMR based on UN projections for Myanmar which shows a 3.1% annual reduction in MMR. The 2004–2005, Nationwide Cause-Specific Maternal Mortality Survey had estimated the MMR to be 316 per 100,000 live births.[18] Based on these figures, it seems that achieving the national MDG 5 MMR target of 145 per 100,000 live births by 2015[19] remains a challenge in Myanmar.

Fig 2: Trends in Maternal Mortality



The same survey also reported significant variations in MMR based on age, type of delivery, urban–rural locality and region. MMR was highest in the 45–49 age group, but younger women aged 15–19 years also showed higher risks compared with other age groups. The majority of maternal deaths (88 per cent) occurred at home, but also in public hospitals (10 per cent) or on the way to a healthcare facility. The study also found that MMR was 140 per 100,000 live births in urban populations but 363 per 100,000 live births in rural populations. Subnational figures showed MMR to be lowest in the hilly region (132 per 100,000 live births, ranging from 47 to 216) and highest in the central plains (449 per 100,000 live births, ranging from 317 to 581),

Fig 3: Causes of Maternal Deaths



Ref: Nationwide Cause Specific Maternal Mortality Survey 2004-2005. Yangon: MOH, UNICEF, 2004- 2005

with MMR of 264 (range: 52–477) and 337 (range: 266–409) per 100,000 live births in the coastal region and the delta, respectively. Among the states and regions, the lowest estimate was 136 and the highest 527 per 100,000 live births.[20] The verbal autopsy of the same survey (Fig 3) showed that severe postpartum haemorrhage was the main direct obstetric cause of maternal deaths (30.98%), followed by hypertensive disorders of pregnancy including eclampsia (16.9%) and abortion related causes (9.86%).

Fertility:

The Total Fertility Rate indicates a post-transitional stage in fertility in Myanmar, with a below-replacement level of 2.03 (urban 1.68, rural 2.18) in 2007, a gradual decline from 3.4 in 1990 and 2.4 in 2000-2001.[21] While the rural TFR declined sharply from 3.28 in 1997 and 2.8 in 2000-2001 to 2.18 in 2006, urban fertility remains substantially lower (TFR 1.97 in 2001 and 1.68 in 2007). The mean number of children born to married women was 4.7 in 2006.[22] The decline in fertility levels have been attributed to delays in age of marriage and first birth, increase in proportion of never-married women[23], declined fertility preferences and increased use of modern methods of contraception among women in Myanmar. However, it is also important to bear in mind that most reproductive health programmes cater only to married adult women and not necessarily to unmarried adolescents in Myanmar. There are also restrictive abortion laws in Myanmar which means that appropriate sexual and reproductive health services may be needed to prevent unsafe abortion and abortion related maternal deaths.

Contraceptive Prevalence:

Optimal birth spacing has proven positive neonatal outcomes. Myanmar has also demonstrated a gradual increase in its contraceptive prevalence rate (CPR) reaching 37% in 2001 (32.8% using modern methods and 4.2% - traditional methods) and 41% in 2007 (38% using modern methods and 3% traditional methods.)[24] The most common method is injectable. Contraceptive use is the highest amongst women in urban areas, those with secondary or higher education, and among the richest women. Ever married woman with two children have the highest usage rate of contraceptives.[23]

Antenatal care:

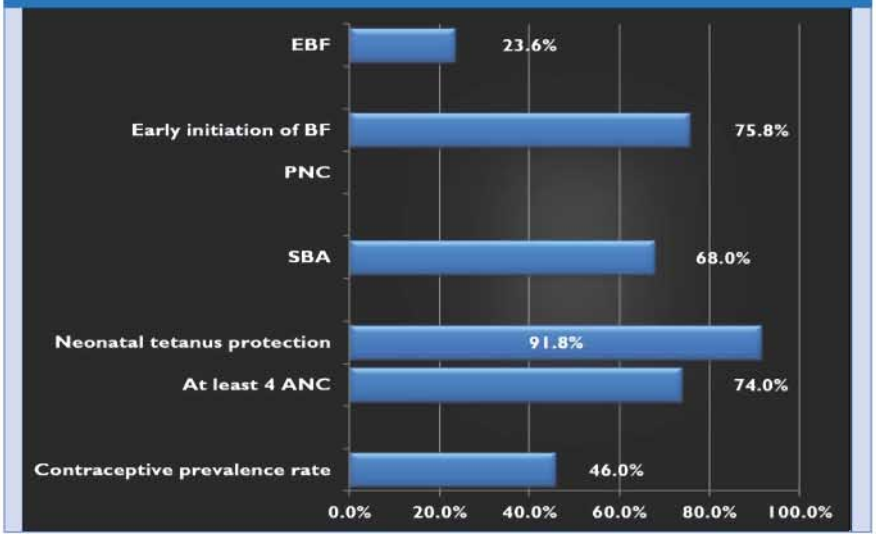
The latest estimates from the MICS indicate that 93.1% of woman with birth in the two years preceding the survey received antenatal care at least once during their pregnancy from any kind of provider. Findings from the interviews indicate that generally women tend to have late ANC visits and often will not go to the ANC clinics early in the pregnancy because they are ashamed. Coverage of antenatal care is higher in urban areas (98.3%) than in rural areas (91%) The vast majority of women with secondary or higher education as well as women in the richest households are more likely to receive antenatal care. Also, 86.2 percent of the poorest women received antenatal care at least once during their pregnancy. A total of 83.1 percent of ever married woman with a birth in the last two years received antenatal care from a skilled provider. More women in urban areas (95%) than woman in rural areas (78.4%) receive antenatal care from a skilled provider. Women with secondary or higher education and the ones in the richest quintile have the highest rates of utilising antenatal care from skilled providers.[25]

Skilled attendance at delivery:

The MICS (2011) also showed that 70.6 percent of births were attended by a skilled attendant.[24] In Chin and North Shan states one in ten women still deliver without any skilled attendance at all. Usually skilled attendance at birth tends to be higher amongst women in urban areas (89.6%), in the richer households (96.10%) and amongst women with secondary or higher educational levels (85.3%). Further, over one third of women (36.2%) delivered at a health institution (either public or private)**. The highest rates of facility delivery were found in Yangon with 68.9 percent. Institutional deliveries were also found to be higher in urban areas (65.2%), amongst more educated women (54%) and only 12% of women from poorest households deliver at an institution.[26] One of the key findings during the field visits was that TBAs still conduct a lot of deliveries in rural areas as their services are affordable, they are well known in the

** During the field visits it was found that deliveries in health facilities could cost up to 200,000 Kyat which is a significant sum of money especially in rural areas.

Fig 4: Coverage along the continuum of Care



community and they also help families with household chores.†† However, there are no proper guidelines regarding TBAs in the country and limited information at the national level on the exact and accurate numbers of TBAs in the country. Some partners do support to upgrade TBAs knowledge and skills by providing *do and don't* trainings for TBAs where they are taught about hygienic and clean delivery practices, recognition of danger signs and when to refer in cases of complications.

Figure -4 above shows the coverage of key indictors along the continuum of care for RMNCH which shows that there are many successful programmes that have sustained high rates of coverage (E.g.: Vit A) at national scale. However, there are also many other missed opportunities to improve coverage of key MNCH indicators despite many opportunities during the continuum of care where the pregnant woman comes into contact with the health care system.

††During the field visits it was found that TBAs charge approximately 30,000 kyats for their services. The TBA will come and stay with the pregnant woman at her house, support with the household chores, conduct the delivery and families can also opt to pay her in instalments. Comparatively, a midwife will charge somewhere in the range of 30,000- 60,000 Kyats and will not provide any additional support like the TBA. Further, it was also found that in many instances families will chose the TBA over the AMW because the TBA is much more experienced, confident and a known entity in the village whereas the AMWs and some MWs are young, less experienced and may not be too confident starting out on their own. In terms of harmful practices, during the field visit it was found that there is a practice of uterine massage and placing hot bricks on the abdomen to facilitate uterine involution. TBAs also do not seem to be aware of all Essential Newborn care messages and healthy newborn care practices.

Maternal Nutritional status:

Poor maternal nutritional status and iron and folic deficiency anaemia adversely influence pregnancy outcomes. The best available local estimates are from a 1994 study conducted by the Department of Medical Research (Lower Myanmar) which showed that 58 % of the pregnant women were anaemic, while the study on anaemia and worm infestation among under 5 children and pregnant women carried out by the Nutrition Section of the Department of Health in 2004 found 71% of pregnant mothers were anaemic. During the field visit, we also explored sociocultural factors surrounding nutrition of pregnant women and found that there is a lot of avoidance of specific foods during pregnancy and the postpartum period.‡‡ Eating down during pregnancy and avoidance of the Iron and Folate tablets is quite common because they fear that these will lead to having a big baby and therefore a difficult delivery. Women often tend to work till very late in their pregnancies and most rural households still depend upon wood fire stoves to cook which can have negative consequences. Targeted antenatal care interventions, such as promotion of bed net use for prevention of malaria, counselling on nutritional requirements during pregnancy, breastfeeding, Iron and Folic acid supplementation programmes need to be strengthened. Further formative research around household food habits and nutritional surveys should be conducted to better understand the true burden and causes of anaemia in the country.

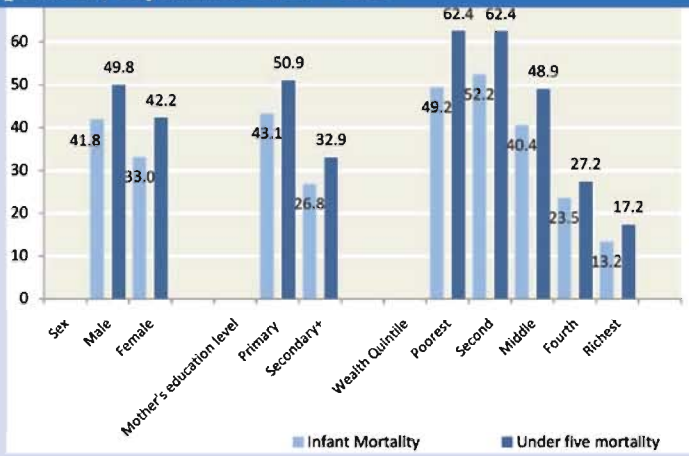
Infant Mortality Rates:

The Infant mortality rate is estimated to be 48 per 1000 live births (2011) with a target to reduce IMR to 32.7 by 2015. There is also a wide variation in the terms of where the U5 deaths occur in Myanmar with the majority of the children dying in rural areas (52.9) compared to 29.1 in urban areas.[27] There also other important differences in the determinants of infant and child death in Myanmar with a larger number of male children under five dying compared to girl children[§§], larger number of deaths of children in mothers who are better educated (greater than secondary school) and across wealth quintiles (U5MR is 62.4 amongst the poorest households compared to 17.2 amongst the richest households). [28]All of these are estimates and state/ regional level disaggregated data is not available in the country. The leading

‡‡ Foods avoided include: Bamboo shoot, mushrooms, watercress, Bitter gourds, frogs, lizards, hedgehog, rodents, fried fish, oils, onions, bananas and milk. Salted fish and soups are eaten quite commonly because women believe that it helps to produce more milk. There is also a tradition of postpartum isolation using fires and blankets for the first 45 days postpartum.

§§The latest figures from MICS show that amongst the U5 children, 49.8 % of males die compared to 42.2% females & for IMR 41 % of male infants die compared to 33% of female infant deaths.

Fig 5: Infant Mortality and Under 5 mortality rates by sex, mothers educational level and wealth quintile, Myanmar 2009- 2010



Source: Myanmar Multiple Indicator Cluster Survey 2009-2010

cause of death in children under five, are pneumonia, diarrhoea and malaria according to nation-wide cause specific under five mortality survey 2002-2003. Only a third of children are estimated to receive antibiotic treatment for suspected pneumonia.[29] Trend estimates for the national and rural levels across the years generally shows declining trend in child mortality. Figure 5 shows the Infant and U5 MR Rates in Myanmar and their relation to sex, mother's educational level and wealth quintile.

Breastfeeding:

Three quarters of mothers of Myanmar initiate breastfeeding within one hour of birth in Myanmar. Mothers in urban areas, wealthier and better educated are more likely to breastfeed within an hour of birth. Only 23.6% of children are exclusively breastfed up to the age of six months in Myanmar. The prevalence of breastfeeding is slightly higher in rural areas than in urban areas. Exclusive breastfeeding rate varies between 1.3 percent in Rakhine to 40.6% in Kachin. [30] Overall, knowledge on the importance of early and exclusive breastfeeding varied amongst women in the townships that we visited. Counselling for breastfeeding, mass media campaigns, social mobilization, Baby friendly Hospital Initiative and Kangaroo Mother Care are all interventions that could be strengthened to improve breastfeeding rates.

Nutritional status of children:

Overall, 22.6 percent of the children in Myanmar aged under five are moderately underweight, and 5.6% of children are severely underweight. 35.1 % are moderately stunted or too short for their age while 12.7% are severely stunted. 7.9 percent of children are moderately wasted or too thin for their height, and 2.1 % are severely

wasted. Children in rural areas are more likely to be underweight and stunted than children in urban areas. Under nutrition is also much more common in Rakhine and Chin states than in other states and divisions of the country and also much more common amongst the poorest families. [31]

Low birth weight:

The results from the MICS indicate that amongst the 56.3% of infants that were weighed at birth, 8.6 percent of infants were estimated to weigh less than 2.5 kgs. Babies born in urban areas (81.6%) are more likely to be weighed than babies born in rural areas (46.1%). These figures are likely to be an underestimate as most babies are not weighed at birth. Further, we do not know what proportions of babies are very low birth weight. Foot length measurements especially for home births by birth attendants, volunteers or parents can be an effective screening tool to identify low birth weight or premature newborns so that they can receive targeted interventions for improved survival

Adolescent Pregnancy:

Adolescent pregnancies are also known to have negative consequences for the health and nutritional status of the mother and her baby. About 19 per cent of young women in developing countries become pregnant before age 18. This accounts for 95% of the world's births to adolescents. Adolescents who become pregnant tend to be from lower-income households, be nutritionally depleted and also give birth to babies that are undernourished and low birth weight. This perpetuates poverty and exclusion, and denies young girls basic human rights. The potential of many girls goes unrealised and unfulfilled with many missed opportunities in life. The latest UNFPA World Population Report (2013) shows that the adolescent birth rate per 1,000 women aged 15 to 19, is 17 in Myanmar which is low compared to other countries in the region such as Nepal (81), India (76), Laos (110) and Thailand (47). [32]

4 The global context : Neonatal Health

Worldwide neonatal mortality has declined from 33.2 deaths per 1,000 live births in 1990 to 23.9 per 1,000 live births in 2009.[33] However this decline has been slower than the under-five mortality decline for the same period[34]. Between 1990 and 2009 neonatal mortality declined globally on average 1.7% per year while under-five mortality declined 2.1% per year. [35] As a result the proportion of child deaths due to neonatal mortality increased in all regions of the world from 38.2% globally (3.681 million) in 2000 to 40.3% (3.072 million) in 2010. [32] These figures explain the need to do more for newborns across the world. The latest global estimates indicate that four out of five newborn deaths result from three preventable and treatable conditions which are outlined in Table 3.

Table 3: Major causes of neonatal deaths and effective interventions.	
Complications from prematurity	Can be tackled by a package of interventions for Preterm labor management including antenatal corticosteroids and Essential newborn care, including Kangaroo mother care for preterm/ premature or LBW infants.
Complications during childbirth-	Can be tackled by Prevention with essential childbirth care and Essential newborn care including neonatal resuscitation
Newborn infections	Prevention with essential child birth and newborn care, chlorhexidine for home births in high mortality settings (NMR > 30) and Case management of neonatal sepsis
Source: http://www.everynewborn.org	

Newborn health has since gained importance and features prominently amongst recent global initiatives such as a Promise Renewed which aims to accelerate the annual rate of reduction in U5MR in every country, with the goal of reaching a national average of 20 by 2035.*** There is also growing recognition that unless there is major progress towards reducing newborn mortality, the targets for child mortality for 2035 of 20 in every country cannot be met. Recently, there has also been a global momentum towards an Every Newborn action plan††† - a global plan for the decline of newborn mortality across the world which aims to propose a roadmap for change in countries, enabling high-level policy makers to take accelerated action to design and implement national plans for improving newborn survival and health and reducing stillbirths. This effort is linked to the UN Secretary General's Every Woman Every Child initiative and to A Promise Renewed and follows other important initiatives such as the launch of the *"Born Too Soon"* report‡‡‡ and World Prematurity Day movement.

It is now well established that care in the 24 hours preceding and following childbirth is particularly important as this is the time window that most complications can be averted and most lives saved. Care during labour, childbirth and the first few days of life offers triple returns for investment and has potential to reduce 1. Half of all maternal deaths. 2. Around half of all stillbirths and 3. Around half of all newborn deaths. Hospital and home postnatal care visits in the first week of life supports families to implement good care practices and can identify newborn illness, and refer quickly, if necessary. Community health workers have also been shown to successfully conduct home postnatal visits to empower families for better care seeking for newborn health illnesses. Improvements in family planning, avoiding unwanted pregnancy particularly among adolescent girls, maternal nutrition and quality antenatal care have all been shown to save lives. Evidence-based interventions for prevention and treatment of the major causes of newborn mortality have proven to be effective and scalable even in low-resource settings. In the last decade, 77 countries reduced their newborn mortality rate by over 25% including 12 low income countries notably Bangladesh and Nepal in South Asia. The lessons learnt indicate that such progress is possible when countries apply an integrated strategy that links key interventions across the continuum of care, from pre-pregnancy care through to the post-partum period. Table 4 below summarises the latest global recommendations for newborn care. [36, 37 and 38]

***Further details available at http://www.apromiserenewed.org/

†††Further details available at http://www.everynewborn.org

‡‡‡The born too soon report is available at: http://www.who.int/pmnch/media/news/2012/preterm_birth_report/en/

Table 4 List of recommended Interventions for Newborn Health		
Time Period	**Routine care**	**Interventions if required.**
Newborn care immediately after childbirth (first hour)	Immediate thermal care, in skin-to-skin contact with the mother Check vital signs (breathing) Assess need for urgent intervention Examine for congenital anomalies Apply antimicrobial to eyes Administer vitamin K Dry the newborn (do not remove vernix or bathe the baby) Hygienic cord and skin care Initiate breastfeeding	• Neonatal resuscitation and ventilation for babies who do not breathe at birth (asphyxia management) • Refer to higher level facility if problems are present that cannot be managed at the health facility where the baby was born
Immediate (first 24 hours), early (48 hours) and late (6 weeks) newborn care (visit from/at home)	• Weigh the baby – assess weight gain • Assess and support breastfeeding – alternative feeding methods • Assess newborns warmth • Assess for infection • Assess jaundice • Assess danger signs • General health education – baby care, hygiene • Awareness of danger signs • Immunize if due (BCG, hepatitis B, oral polio vaccine) • Bed-nets (in malaria endemic regions) • Rooming-in	• Kangaroo mother care for preterm babies and babies weighing less than 2,000 grams. • Extra support for feeding small and preterm babies • Management of newborns with jaundice • Prophylactic antiretroviral therapy for babies exposed to HIV • Presumptive antibiotic therapy for newborns at risk of bacterial infection • In preterm babies continuous positive airway pressure to manage babies with respiratory distress syndrome • Surfactant to prevent respiratory distress syndrome • Case management of neonatal sepsis, meningitis and pneumonia • Refer if problems are present that cannot be managed at the healthcare level where the baby was born

5 Methods

This review of newborn health interventions in Myanmar was conducted over the time period (August- Dec 2013) and utilized mixed methods. The methods utilised included an extensive literature review, National Consultations, Stakeholder Mapping, Key Informant Interviews, and Focus Group Discussions with health workers, midwives, auxiliary midwives, mothers and caregivers, field visits and clinical observation visits at various health facilities in Thaton and Kyaukpaduang townships.

The document analysis summarised the background context, policies and guidelines associated with maternal and newborn care in Myanmar. All the secondary sources of information were obtained through the document review in order to close down information gaps. Documents related to maternal and newborn care were obtained in close collaboration with the Ministry of Health and UNICEF and key INGO programme advisors. Special attention was given to equity focussed policies and to policies regarding community participation in maternal and newborn care and to policies facilitating continuum of care. Annex 3 provides a list of documents that were used for the desk review. Additional information was gathered through in-depth interviews with partners, stakeholders and key government officials. In depth interviews and focus group discussions were also conducted with health care providers and care givers at the community level. The interview guide for the focus group analysis is provided in the annex 4. During the time in-country, interviews were also conducted with stakeholders/representatives from key partner organisations (UN, bilateral and multilateral development agencies, NGOs, CSOs, private sector, etc.) and with relevant government authorities. Annex 5 provides the list of people consulted during the entire review process. In order to experience implementation strategies and understand the context, health facility observation visits were also conducted in two townships where visits were conducted to a range of health facilities from township hospitals, to rural health centres and midwife led sub centres. Two semi quantitative methods were also utilised using validated global instruments adapted for Myanmar. The first of which was a benchmark analysis conducted to assess Myanmar's readiness to scale up newborn care. The "Scale-up Readiness Benchmarks" tool developed by

Save the Children was utilised for this purpose. The tool consists of 27 benchmarks that measure the degree to which health systems and national programmes are prepared to deliver interventions for newborn survival at scale. For each of the benchmarks the present status was assessed and determined as 'achieved', 'partially achieved' or 'not achieved'.

The second exercise conducted was to identify maternal and newborn health bottlenecks in Myanmar using a tool based on the Tanahashi model.[39] The bottleneck analysis had the following objectives:

1. Analyse the health systems bottlenecks and challenges preventing the scale up of high-impact, cost-effective interventions/packages for newborns
2. Identify potential solutions, including innovative strategies to overcome the barriers, bottlenecks and challenges identified

This tool was organized to facilitate the identification of maternal and newborn health bottlenecks across the seven health system building blocks:

1. Leadership and governance (enabling environment)
2. Health financing (enabling environment)
3. Health work force (supply)
4. Essential medical products and technologies (supply)
5. Health services (supply, quality)
6. Health information systems (quality)
7. Community ownership and partnership (demand)

The tool emphasized five critical interventions that address the three main causes of neonatal mortality in Myanmar: complications from prematurity, Intrapartum-related including asphyxia, and newborn infections. We considered them as "tracer interventions or proxy measures to understand existing challenges for newborn health in Myanmar. Although interventions along the whole continuum of care are important for newborn survival, an emphasis was placed on the first 24 hours of birth; labour, child birth and immediate postnatal care which is when the majority of maternal and neonatal deaths occur. An additional component - cross cutting and systemic issues was added to the existing tool in order to facilitate the identification of bottlenecks across all the seven health system building blocks. Table 5 below outlines the distribution of groups and their scope of work on components of the bottleneck analysis tool during the workshop.

Table 5: Distribution of groups working on various components of the MNH bottleneck analysis tool.		
Groups	**Component/ Intervention**	**Scope**
Group 1	Preterm/ low-birth weight	Management of pre-term birth, (focus on antenatal corticosteroids (dexamethasone), Kangaroo mother care (focus on skin to skin), breastfeeding and feeding support for premature and small babies
Group 2	Normal delivery (including management of asphyxia)	Appropriate care at delivery (focus on proper use of partograph (for decision-making), Neonatal resuscitation
Group 3	Managing complications of childbirth and the postnatal period	Basic Emergency Obstetric Care (focus on assisted vaginal delivery); Comprehensive Emergency Obstetric Care (focus on caesarean section and blood); Inpatient supportive care (focus on IV fluids/feeding support and safe oxygen, for sick and small newborns).
Group 4	Normal postnatal care (immediate and beyond)	Basic Newborn Care (focus on cleanliness/cord care, warmth, and feeding at health facility and in the home), Influencing household practices (e.g. breastfeeding)
Group 5	Prevention and Treatment of Infection	Prevention opportunities during pregnancy (e.g. ITNs, TT), Treatment of severe infections (focus on using injectable antibiotics)
Group 6	Group 6 – Cross-cutting and systems-related issues	Health System building blocks and other cross cutting issues.

6 Findings

6.1 Readiness for scaling up of newborn health interventions:

As nationally representative data around the determinants of newborn health is limited in Myanmar, this information gap limits programme planners and mangers to design effective responses to improve newborn health. For this reason and because the assessment team wanted to have a semi-quantitative method for tracking changes in readiness to scale up of newborn health interventions over the course of ten years in Myanmar, we decided to adapt the "Scale-up Readiness Benchmarks" tool developed by Save the Children. This tool consists of 27 benchmarks that measure the degree to which health systems and national programmes are prepared to deliver interventions for newborn survival at scale. Specifically, three priority areas were looked at all of which have well defined benchmarks: Agenda Setting (6 benchmarks), Policy Formulation (13 benchmarks) and Policy Implementation (13 benchmarks). Detailed discussions were held amongst the invited experts at the initial workshop and once consensus was reached within their groups, the findings were represented as traffic lights to provide a snap short: **'achieved' (green), 'partially achieved' (orange) or 'not achieved' (red).** For every claim made, a relevant source was identified so that findings could be validated at a later stage.

a. Agenda setting for Newborn Health

In terms of the agenda setting for newborn health, participants felt that Myanmar had done quite well over the last decade. A national newborn health assessment was being planned and Myanmar had at least partially achieved all the benchmarks. Further, participants also noted that a focal person for newborn health has existed in the country since 2006, which is far ahead of peer countries in the region. The table -6 below shows the findings in greater detail.

Table 6: Findings from the exercise on Agenda setting for newborn Health (comprises of Six Benchmarks)		
Benchmarks	**2006**	**2013**
National needs assessment for newborn conducted		
Local evidence generated for newborn survival		
Local evidence disseminated on Newborn survival		
Existence of a convening mechanism for newborn health issues		
Focal person for newborn health within the Ministry of Health		
Key Maternal and Newborn indicators included in the national surveys		
Key: 'achieved' (green), 'partially achieved' (orange) or 'not achieved' (red).		

b. Policy Formulation

The findings of the policy formulation group were very different and showed that much more needed to be done. They identified that the following benchmarks had not been achieved over the last decade despite the increasing importance given to neonatal health in Myanmar.

1. There is no nationally endorsed newborn health policy in Myanmar
2. Newborn health is not fully integrated into other health policies and strategies
3. Essential drugs list doesn't include injectable antibiotics at the primary health care level
4. Community based and primary level cadres§§§ (AMWs, MWs) are not authorised to administer injectable antibiotics for newborn infection routinely.
5. Community based cadres (AMWs) are not authorised to perform neonatal resuscitation
6. There were no estimates for the RMNCH expenditure per child under five and for women of the reproductive age group.

§§§Midwives are paid Government staff and receive 24 months training . They are already giving Injectable (DMPA), immunizations (TT)and drugs. Auxiliary Midwives (AMWs) are unpaid Government health volunteers and they receive six months training.

Table 7: Findings from the exercise on Policy Formulation (13 benchmarks)		
Benchmarks	**2006**	**2013**
National newborn policy endorsed		
Newborn policy integrated into other health policies or strategies		
National Behaviour change communication strategy		
Essential drug list includes Injectable antibiotics for primary care level		
Midwives authorised to perform neonatal resuscitation		
Community based cadres authorised to administer antibiotics for newborn infections		
Primary level cadres authorised to administer injectable antibiotics for newborn infection as routine		
Community base cadres authorised to perform neonatal resuscitation		
Primary level cadres authorised to perform neonatal resuscitation		
Key maternal and newborn health indicators included in national health information systems		
National targets to track newborn health established		
Reproductive, maternal, newborn and child health expenditure per child under five and per woman aged 19–49		
Costed implementation plan for maternal, newborn and child health		
Key: 'achieved' (green), 'partially achieved' (orange) or 'not achieved' (red).		

c. Policy Implementation for Newborn Health

Most of the benchmarks under this category were partially achieved in Myanmar. Some degree of progress has already been made over the last decade in Myanmar. Table 5 shows the findings in greater detail. It is important to remember that although, this is good progress much more remains to be done to ensure that all neonates survive and all children thrive in Myanmar. Some of the good achievements for newborn health in Myanmar over the last decade include:

1. A cadre (AMWs/ Non AMW volunteer) has already been identified for providing home based newborn care.
2. In service training materials have already been developed and endorsed for both home and facility based cadres.
3. Newborn care is already included in the curriculum for facility based staff
4. The IMCI manual has already been adapted to include the first week of life

Table 8: Findings from the exercise on Policy Implementation (13 benchmarks)

Benchmarks	2006	2013
Cadre identified for home-based newborn care		
In-service newborn care training materials for community-based cadres		
In-service newborn care training materials for facility-based cadres		
Newborn care training for community-based cadres		
Pre-service newborn care education for facility-based cadres		
Supervision system for maternal, newborn and child health established at primary health centre level		
Protocol or standard for township/station hospital care of sick newborns in place		
Integrated Management of Childhood Illness algorithm adapted to include the first week of life		
Resource requirement for scaling up home-based newborn care available		
Resource requirement for primary healthcare level available for newborns		
Resource requirement for secondary level healthcare available for newborns		
System for neonatal death audits exists		
System for perinatal death audits exists		

Key: 'achieved' (green), 'partially achieved' (orange) or 'not achieved' (red).

6.2 Bottleneck analysis of newborn health interventions

For this exercise, the participants were divided into six groups, five groups worked on the nine newborn intervention areas: Management of preterm birth; Skilled care at birth; Basic Emergency Obstetric Care; Comprehensive Emergency Obstetric Care; Basic Newborn Care; Neonatal resuscitation; Kangaroo mother care; Treatment of

Table 9: Overall findings from the bottleneck analysis of Maternal and Newborn Health Interventions in Myanmar****

Health System building blocks / Interventions	Leadership and governance	Health Financing	Health work force	Essential medical products and technologies	Health service delivery	Health information system	Community participation and ownership
Management of pre-term birth (focus on antenatal corticosteroids (dexamethasone)							
Kangaroo mother care (focus on skin to skin)							
Skilled care at birth focus on proper use of partograph (for decision-making),							
Neonatal Resuscitation (Focus on using Bag and Mask)							
BEOC (focus on assisted vaginal delivery)							
CEOC (focus on caesarean section and blood)							
Basic Newborn Care (focus on cleanliness/cord care, warmth, and feeding at health facility and in the home), Influencing household practices (e.g. breastfeeding)							
Management of severe newborn infections (focus on using injectable antibiotics)							
Inpatient supportive care for sick and small newborns (focus on IV fluids/feeding support and safe oxygen, for sick and small newborns)							

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Index	
Good (Not a bottleneck to scale up)	
Needs some improvements (minor bottleneck to scale up)	
Needs major improvement (significant bottleneck to scale up)	
Inadequate (major bottleneck to scale up)	

severe infections and Inpatient supportive care for sick and small newborns. The sixth group worked on health system and cross cutting issues. Each group consisted of around 10 participants involving representatives from the MoH (DoH, DMR, DMS) from central to the state/ regional and township level, partner organizations, donors, academics and researchers. The group worked together to identify bottlenecks across all the technical interventions and also identified strategies to address the identified bottlenecks. Each team assessed identified bottlenecks of nine interventions as good, need some improvement, need major improvement and inadequate, as shown in Table 9, using the colour coding in the following index. The overall results are presented in the table nine and all the interventions are then discussed individually below (a-i)

a. Prevention and Management of Preterm Births

Babies born before 37 completed weeks of gestation are considered preterm babies. The primary cause of newborn death and disability from preterm births is respiratory distress syndrome (RDS) – difficulty breathing due to underdevelopment of the lungs. Of babies born preterm, survivors may experience lifelong health challenges such as cerebral palsy, impaired learning ability, chronic lung disease, vision and hearing disabilities, and compromised physical health. Standard treatment guidelines and clinical protocols covering prevention and management of preterm births have been developed and are available throughout Myanmar. Facility based obstetricians and station medical officers are also allowed to prescribe antenatal corticosteroids.

Priority Bottlenecks

1. Prematurity has not been identified as a major cause of preventable deaths in the national RMNCH strategy and the national plan/ strategy does not include specific actions to avert those deaths through prevention and management of preterm birth including administration of antenatal corticosteroids.

2. Trained human resources are not available at all places and some Station medical officer posts are vacant in the country.

3. No antenatal corticosteroids are available and recommended at the primary health center level.

4. Midwives are not currently allowed to prescribe Corticosteroids for prevention of preterm birth.

5. Information about antenatal corticosteroid use not included in HMIS. Information on LBW/ Preterm Births is recorded in the child death notification form but basic health staff are sometimes confused.

6. Awareness about prematurity and newborn health is low in communities.

Strategies

1. Establish the burden of preterm birth in the country and develop national service delivery guidelines/protocols for use of antenatal corticosteroids in Preterm birth management and ensure that it is integrated into existing guidelines.

2. Provide in-service training on antenatal Corticosteroid administration for all healthcare providers and provide necessary supportive supervision to ensure that national standards are followed.

3. Ensure functioning supply and delivery systems for injection dexamethasone up to the primary health care level and advocate for its inclusion to meet purpose of preterm management in the national essential drug list.

4. Engage professional associations in supporting the dissemination and adoption of antenatal corticosteroids as best practice.

5. Strengthen antenatal screening to include information for all women to report to a facility if conditions that predispose a woman to preterm birth occur, such as preterm uterine contractions, preterm rupture of membranes, and symptoms of pre-eclampsia/eclampsia.

6. Feasibility / operational research models testing the effectiveness of alternative care providers (e.g.: midwives) administering antenatal corticosteroids may be undertaken in the context of rigorous monitoring and research.

7. Increase community awareness through effective community based approaches on the importance of preterm birth prevention and the signs of threatened preterm birth to encourage early and appropriate referral of women and babies needing preterm birth care

b. Kangaroo Mother Care

Kangaroo mother care (KMC) includes a number of interventions including continuous skin-to-skin contact in kangaroo position, support for frequent and exclusive breastfeeding or breast milk feeding. Kangaroo mother care is an effective intervention for clinically stable neonates weighing less than 2000 grams.

Priority Bottlenecks

1. Although KMC is recognised as a high impact intervention, a national implementation plan with standards to introduce and maintain, monitor and evaluate KMC implementation at scale as specific intervention is lacking in Myanmar.

2. KMC is a part of various trainings – For e.g.: the ENC training (project based), IMNCI (project based) and the midwife training curriculum but it has not been expanded across the country because of a lack of resources.

3. There are insufficient numbers of health care providers who are knowledgeable, skilled and motivated to implement Kangaroo mother care at health facilities.

4. Proper space and infrastructure to establish KMC programmes at health facilities are needed. Availability of proper space (rooming in) for mothers who are eligible for prolonged stay at health facilities is also needed.

5. Awareness about newborn health issues and the positive benefits of KMC is low at the community level. Numerous barriers to adoption of KMC at the community level exist for e.g.: Women are shy especially when it's the first child; there is lack of male involvement in child rearing and long distance to health facilities. Further, awareness amongst health care providers esp. basic health staff about the life saving potential of Kangaroo Mother Care is also not widely known.

6. Referral linkages are not functional especially for complicated preterm births or where babies need specialist care.

7. Information on KMC is not collected routinely in health information systems.

8. Challenges for basic health staff to conduct home visits to follow up on KMC at home.

Strategies

1. Develop and implement national standards or clinical protocols for KMC including support for feeding of LBW infants.

    - Develop standards for KMC at health facilities (e.g. KMC rooms inside the health facilities including food/lodging and drugs) and ensure KMC is practiced as needed

    - Availability of ambulatory care and follow-up for KMC babies

    - Context specific and innovative approaches for implementing Kangaroo Mother Care across the country esp. for rural areas such as cloth designs for KMC, special funds to support food for poor women in the hospital could be introduced.

2. KMC should be introduced as a part of existing clinical standards and included in essential newborn care; midwife and basic health staff trainings so that health care providers training on KMC can be scaled up.

3. Awareness creation efforts need to be strengthened:
    - Targeted approaches needed to raise awareness about Kangaroo Mother Care esp. in rural and remote areas.
    - Volunteers and AMWs need to know how to support mothers to initiate KMC at home and should be involved in IEC campaigns to support implementation of KMC in the country.
    - Involvement of health staff at the hospital level to increase awareness for KMC is crucial for its success.
4. Availability of areas for the mother to stay with the baby at the health facility, and the participation of the father or another family member to support the provision of Kangaroo care is important.
5. Include indicators on KMC in the national HMIS.
6. Mobilize resources for scaling up KMC across the country and provide an enabling environment at health facilities and at home for mothers and caregivers to practice KMC.

c. Skilled Care at Birth

Appropriate care at birth should be provided by skilled personnel. A skilled attendant is "an accredited health professional – such as a midwife, doctor or nurse – who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns.[1] Basic Emergency (or Essential) Obstetric Care (BEOC) comprises of 7 "signal functions" that include: the use of intravenous/intramuscular antibiotics, intravenous/ intramuscular oxytocin, intravenous/intramuscular anticonvulsants, manual removal of retained placenta and removal of retained products of conception (e.g. by Manual Vacuum Aspiration), assisted vaginal delivery and basic newborn resuscitation. Comprehensive Emergency (or Essential) Obstetric Care (CEOC) includes all BEOC signal functions plus Cesarean section and blood transfusion.

Priority Bottlenecks

1. No results based financing mechanism in place compounded by family's low income and high transportation cost impede an access to skilled care at birth for the most in need. The policy implementation to offer MNCH services Free of Charge at all level of health system yet has some challenges.

2. Appropriate policy, strategies and guidelines for safe delivery exist in the country but specific actions enabling pregnant women to access skilled delivery care services are weak in the country.

3. Logistics and supply chain for essential commodities and supplies for safe delivery services not strengthen enough for proper functioning across the country.

4. Partographs are not being used routinely to monitor the progress of every labour. This is because of a variety of reasons, training weaknesses, availability and enabling environment for partograph use doesn't exist esp. at the sub rural health centre level.

5. There are insufficient numbers of trained health care workers and midwifery personnel to provide safe delivery services across the country. Production, deployment and retention of the required number of SBAs is a significant bottleneck to expand skilled birth attendance for all. Existing midwives are overloaded with a variety of other tasks and in some cases they cannot even provide midwifery services because they are busy with other activities.

6. The quality of trainings for skilled birth attendants is variable across the country. This is because of the quality of existing training curricula, teaching methods are variable- not all curricula are participatory or competency based. Clinical exposure is limited and some technical content needs to be updated in line with existing standards.

7. Mechanisms for promoting ongoing mentorship and supportive supervision of skilled birth attendants especially ones practising in rural and remote areas needs to be strengthened.

8. There are insufficient facilities for delivery services esp. in rural and remote area (1 RHC covers 20000 population, 1SRHC covered 4000 but exception in some area e.g. Chin state).

9. Communication & transportation facilities and referral back up needs to be improved esp. for complicated pregnancies.

10. Township health authorities are not able to utilize existing monitoring data effectively; they are not able to analyze data effectively to plan for the delivery of midwifery services.

11. Low levels of knowledge exist in the community about the importance of delivering at an institution or with a skilled birth attendant. Due to a variety of reasons, many women still prefer to deliver at home and in many cases with a Traditional Birth Attendant.

Strategies

1. The national strategic plan for safe motherhood needs to be further strengthened. Specific details need to be included on feasible action steps to ensure that every woman receives skilled care at birth. Specifically, these include details on:
    a. Actions to minimise the three delays
    b. Actions to improve availability, accessibility and quality of safe delivery services.
    c. Actions to improve demand, awareness and care seeking for safe delivery services
    d. Actions to improve quality of care and accountability of the health care system.
    e. Actions to improve the supply chain of essential drugs and commodities
    f. Actions to improve affordability and minimise catastrophic health expenditures for the family.
2. There is a need to look at existing health facility capacity for safe delivery services across the country. At many places, there are no labour rooms attached health centers in some areas.
3. There is a great need to strengthen national health system by strengthening logistics management information systems, streamline distribution systems, identify financial resources for procurement and supply chain operation, and enhance forecasting and procurement planning for the provision of safe delivery services across the country.
4. Improve quality of SBA training programmes through competency based trainings are in line with existing global standards and norms. Specifically, ensure that sufficient SBAs are trained and deployed at primary health care levels with the necessary support; strengthen referral services; strengthen SBA training institutions; strength support and supervision systems for SBAs; and develop regulatory and accreditation systems for SBAs.
5. Develop and pilot innovative models to improve access to skilled care at birth for all. For e.g.: scaling up midwifery care services, cash transfers to women, mobile-health, demand side schemes, Results based financing, Free delivery care, voucher schemes, transportation subsidies, functional social welfare groups, cooperation with other sectors beyond health to promote safe delivery services for all.
6. As a part of the national Human Resources strategy, ensure that adequate human resources are available for the provision of safe delivery services across the country.

A system for the rational development, deployment, management and retention of health care providers is required. This must be based in a national human resource policy which specifies the provision of appropriate motivations for health workers such as career paths, additional incentives (financial or others) for long service and work in challenging places and effective professional supportive supervision for younger staff and those in remote places

7. Develop national quality improvement guidelines for safe delivery at in- service training sites and service provision sites so that quality of services is high, staff are appropriately mentored and supervised and services are catered to the needs of the clients.

8. Ensure better referral linkages between the community and the health system so that all women with complications can access higher level skilled care as and when needed. This could be done through awareness creation in the communities, Community fund raising for creation of an emergency fund, establish other social support groups, improved communication and transportation systems etc.

9. National guidelines need to be established for better decision making at the local level e.g.: township authorities should be promoted to make better utilization of routine HMIS data for planning of delivery care services. Decentralization of authority and development of tailored implementation plans by townships should be promoted so that high coverage and equitable access to safe delivery services is achieved.

d. Neonatal Resuscitation

Neonatal resuscitation is defined as the set of interventions at the time of birth to support the establishment of breathing and circulation. Every skilled birth attendant should be able to perform interventions that prevent asphyxia and to resuscitate a non-breathing baby. The availability of resuscitation equipment, including suction and bag and mask devices, presents an additional challenge for combating asphyxia in Myanmar. However, Myanmar performed quite well in the bottleneck exercise (see table 9 above).

Priority Bottlenecks

1. Auxiliary Midwives are not allowed to conduct neonatal resuscitation in community settings.

2. Post resuscitation referral to higher centres is a challenge because there are no resources available to transfer the baby.

3. Weakness in supply chain management means that adequate numbers of bag/tube and masks are not available with front line health care providers or at health facilities across the country.

4. Quality of neonatal/ intrapartum care needs to be improved further.

5. Existing IEC materials do not cover Birth asphyxia.

6. Training quality and competence of midwives in conducting resuscitation using tube/bag and mask needs to be improved.

7. There is a weakness in review of quality neonatal service and no direct indicators for to measure resuscitation status.

Strategies

1. As auxiliary midwives conduct a significant proportion of deliveries in rural communities, allowing AMWs to conduct neonatal resuscitation should be a feasible option. It will reduce inequalities by extending care to underserved populations who may otherwise not receive any care for resuscitation. This option should be explored in greater detail as auxiliary midwives are already an established cadre and have already been trained to conduct normal deliveries. However, this should be done with an additional emphasis on well-functioning referral and supportive supervision system for the AMW.

2. Where possible, local funding mechanisms e.g. emergency funds at health facilities or communities should be established which could be used to facilitate referral post –resuscitation.

3. Logistics and supply chain need to be improved immediately.

4. Quality improvement approaches or clinical guidelines for better intrapartum care should be developed and implemented along with data collection and analysis.

5. IEC materials on newborn health need to be reviewed and standardized uniformly so that the same messages are disseminated across the country. Messages can include preparation for birth, routine care, initial stimulation, ventilation and continued ventilation etc.

6. Skills of midwives in conducting resuscitation using bag/tube and mask needs to be improved further with an emphasis on skills building through increased focus on clinical practicum sessions using simulation models, case demonstration and clinical practice.

e. Basic Emergency Obstetric Care and Comprehensive Emergency Obstetric Care

Basic emergency obstetric care (BEmOC) includes seven signal functions to be performed in health centres without the need for an operating theatre. Operative vaginal delivery refers to the application of either a vacuum device or forceps to assist the mother in effecting vaginal delivery of a foetus. Comprehensive emergency obstetric and newborn care (CEmOC), typically delivered in hospitals, and includes all functions in BEmOC, plus caesarean section and safe blood transfusion.

Priority Bottlenecks

1. The financial envelope for the provision of emergency delivery services needs to be further expanded in Myanmar. Out of pocket expenditures by families for emergency delivery care across the country is also quite high.
2. Human resources for safe delivery are still not adequate and appropriate and adequate supervision for these cadres is a major challenge.
3. Logistics and supply chain management is a significant bottleneck in Myanmar.†††† Vacuum extractors, forceps, Misoprostol are included in the essential commodities list. However, minimum standards for drugs, commodities and supplies do not exist. There are no financing mechanisms to procure drugs internationally.‡‡‡ Cold chain maintenance esp. for oxytocin is a major challenge. Transportation costs for delivering supplies and commodities is also a significant bottleneck. Overall, there is limited national logistics capacity which means that staffs at the local level are not able to accurately forecast the demand for commodities and supplies. This in turn creates stock outs at the local level as supply is not able to match the true requirements.
4. Functionality and capacity of health facilities to perform EmOC functions centres is a major bottleneck: There is a mismatch between the required number of BEmOC and CEmOC sites in the country. Mechanism to ensure functionality of EmOC sites is also not operational at the moment. Information on BEmOC and CEmOC sites and functionality are only available for project townships.
5. Private sector is not a part of the national response to provide safe delivery care services for all and therefore excluded from planning and service delivery.
6. Systems for referral and communication at all levels need to be strengthened.

†††† In RH project townships, the logistics and supply chain mechanism have been strengthened but this is not the case in the majority of other non-project townships.

‡‡‡ CMSD has strict rules and regulations for importing drugs and commodities

7. Knowledge and awareness about safe motherhood services are lacking in the community: IEC materials are less available in the local ethnic languages; women do not have knowledge about the need to deliver at health facilities as complications during labor cannot be predicted. There are also many underlying socio-cultural issues related to utilization of safe delivery services.

8. Community needs and preferences are not taken into account while planning for the organization of safe delivery services.

Strategies

1. Advocacy for increasing the fiscal envelope for the provision of emergency delivery services needs to be done by all the partners working in the country. It would be good to undertake exploratory work examining the prospect of developing a national health financing strategy or financing strategies to provide emergency delivery for all.

2. Human resources requirements for the provision of safe delivery services across the country needs to be calculated and a SBA training strategy and implementation plan to produce and appoint the required number of skilled birth attendants needs to be developed.

3. A robust logistics and supply chain management system is of vital importance to the delivery of effective programmes.

4. Engage and partner with the private sector in the provision of safe delivery services for all.

5. Strengthen emergency referral and communication facilities across the country.

6. Information on BEmOC and CEmOC sites and functionality should be collected routinely.

7. Institutionalize quality improvement approaches, Maternal and perinatal death reviews, audits across all the health facilities.

8. RH policy should target all women of the reproductive age group irrespective of their marital status.

9. Emphasise on innovative approaches to increase demand for safe delivery services. For e.g.: through cash transfers, demand side schemes, results based financing etc.

f. Basic newborn care for all newborns:

Basic newborn care comprises of a set of basic preventive measures that are needed to ensure the survival of all newborns including assisting babies to breathe, if needed. BNC includes several key actions, but for the purpose of this exercise, we focused on cleanliness, thermal control (including drying and wrapping, skin-to-skin, and delayed bathing), and support for breastfeeding.

Priority Bottlenecks

1. Although, newborn health is an important part of the five year strategic plan for child health and development, detailed actions for newborn care need to be further strengthened.
2. Use of chlorhexidine for cord care at the community level is not recommended at this time.
3. Professional organizations and associations are not fully engaged as champions of newborn care. For e.g.: Professional societies could play a leading role in the promotion of breast feeding or healthy newborn care practices.
4. Financial resources for implementation of quality newborn care services are limited in the country. National standards on essential services including equipment and drugs at various levels needs to be established. These standards need to be implemented at all levels in the country. For e.g.: standards for a newborn care corner needs to be established at all birthing centers and all requirements for establishing a newborn care corner need to be fulfilled such as cot, radiant warmer, oxygen humidifier etc.
5. Training of health care providers providing essential newborn care services needs to be scaled up across the country.
6. There are insufficient numbers of health facilities with trained newborn health care providers esp. in rural and remote areas of the country 7.1%.

Strategies

1. Newborn Care should be made an integral part of maternal, reproductive and child health strategies and implementation plans and the next strategic plan for child health and development should focus on newborn care in greater detail.

2. Depending on the context esp. in rural areas with high rates of home deliveries, national authorities may wish to review the evidence on chlorhexidine and make a decision accordingly. §§§§

3. A detailed planning exercise should be undertaken for scaling up newborn health in Myanmar and a costed implementation plan developed with key implementation milestones for the next budget and planning cycle.

4. There is a need to scale up trainings for health care providers on newborn health so that adequate numbers of trained health care providers are available across the country providing quality newborn care.

g. Management of Severe Newborn Infections

Neonatal sepsis is a clinical syndrome characterized by systemic signs of circulatory compromise (e.g., poor peripheral perfusion, pallor, hypotonia, poor responsiveness) generally caused by bacterial invasion during the first month of life. The best approach towards management of neonatal sepsis is early diagnosis and aggressive treatment with antibiotics and good supportive care at the health facility. The World Health Organization (WHO) recommends parenteral antibiotic therapy (e.g.: benzylpenicillin or ampicillin plus an aminoglycoside such as gentamicin) in a health facility as the standard treatment for serious neonatal infections (i.e.: septicaemia, pneumonia, and meningitis) in developing countries. In the South Asian context where care at facilities may not be the best option, the best approach is a combination of community mobilization and home visits by community based cadres who can identify PSBI in sick neonates using a standard algorithm, initiate oral antibiotics and refer them to a higher facility for Injectable antibiotics.

Priority Bottlenecks

1. The existing law prohibits Midwives from giving injectable/s except for life saving conditions. According to the National Five-year RH Plan and Five-year Strategic CHD Plan, they can only provide pre-referral treatment. Definitive management of severe infections with injectable antibiotics only happens at station hospital level and above. As midwives are the only ones stationed at the sub center level,

§§§§ The latest WHO guidelines recommend 7.1% chlorhexidine daily application to the umbilical cord stump during the first week of life is recommended for newborns who are born at home in settings with high neonatal mortality (neonatal mortality rate >30 per 1000). Clean, dry cord care is recommended for newborns born in health facilities, and at home in low neonatal mortality settings. Use of chlorhexidine in these situations may be considered only to replace application of a harmful traditional substance such as cow dung to the cord stump.

sub centers can only provide pre-referral treatment, although, this is the closest health facility to the community. This policy bottleneck means that treatment initiation is often delayed, Sometimes, many families do not comply with the referral request and hence do not avail the full course of treatment as it is problematic to a go to a hospital for an extended course of treatment or they simply approach their unregistered or unlicensed or a provider who may provide a completely different treatment regimen.

2. The diagnostic and treatment algorithm for assessment of newborn infections/ Possible Severe Bacterial Infections needs to be updated according to the latest global standards in Myanmar. The existing algorithm and the standards have also not been properly implemented by BHS and hospital staff.

3. There are also many resource constraints to provide appropriate care for newborn sepsis in Myanmar.

4. There are also many financial barriers that families have to face in order to seek early, appropriate care for serious newborn illnesses. ***** This is a significant bottleneck to utilization of health care services.

5. As care seeking for neonatal illnesses is low, there is under-recognition of neonatal illness, delay in care seeking at the household level, lack of access and availability to both appropriately trained health workers and to high quality services to manage neonatal sepsis.

6. The use of injectable antibiotics for serious neonatal illnesses is not included in the existing standard recording and reporting formats of health facilities. Further, information for postnatal contact at the community level and facility level and management of severe newborn infection is included partially in the HMIS but not covered adequately (e.g. - monthly report and morbidity data Form 2). There is also no indicator in the HMIS that measures coverage of treatment for sepsis.

7. Community Case Management guidelines do not include the first month of life and do not emphasize on the neonatal period. Community based identification, treatment and referral is only limited to the project townships (including at state and regional levels) where the Community Case Management project is being implemented and this needs to be expanded across the country.

*****Families have to pay for transport costs, out-of-pocket payments the injectable antibiotics, diagnostic tests, consulting fees to the doctor, registration fees and the Gentamicin is also quite expensive.

Strategies

1. The MoH should consider allowing midwives to provide lifesaving injectable antibiotics for treatment of neonatal sepsis in Myanmar. This approach has been shown to be feasible and effective in many similar contexts in South Asia. As it stands, midwives already provide injectables for contraception (DMPA) and immunization (TT). Despite IMNCI guidelines stating that Injectable antibiotics (Gentamicin) should be provided at the sub center level, this is not actually happening. This should be considered allowing so that midwives can offer these treatments closer to the community. In hard-to-reach areas where access to a trained health worker/ midwife or a health facility is difficult, volunteers (both AMW and Non AMW volunteers trained on newborn health) should be considered allowing to prescribe oral antibiotics for possible serious bacterial illnesses using a standard diagnostic and treatment algorithm. They should be supported by the midwife at the community level who will oversee their work and together they can ensure treatment completion for every case that starts antibiotic treatment.

2. The diagnostic and treatment algorithm for neonatal sepsis should be updated in Myanmar.

3. There needs to be a continued focus on improving knowledge and raising awareness about healthy maternal newborn behaviors at the community level. Harmful socio-cultural practices should be targeted through multiple channels using standard consistent messaging about healthy behaviors and practices. Information, Education and Counseling to promote early care seeking for neonatal illness needs to be strengthened. Other members of the families including husbands and caregivers need to be involved in this effort. Communication for Development initiatives in Myanmar such as the *Seven things this Year* provide an excellent platform to integrate newborn health messages across the country and should be pursued.

4. Monitoring and evaluation of community based efforts should be strengthened including an added emphasis on supportive supervision and mentorship of front line health care providers such as midwives, AMWs and trained volunteers.

5. CCM programme should be evaluated, reviewed and refined so that neonatal sepsis is also a strong component of the overall case management programme.

6. All opportunities for prevention of infections during pregnancy, labor, delivery and Postnatal Period should be promoted and expanded nationwide such as the provision of ITNs , TT, PMCT, clean delivery kit, safe and hygienic births, hand washing, exclusive breastfeeding, prophylactic antibiotics in pPROM cases etc.

7. Given that Out of pocket expenses and financial burden to families of sick neonates are so exorbitant and have many deleterious consequences on families, the entire cost of treatment (including transportation, drugs, any stay in hospital, diagnostic tests) should be made free of cost by the Government.

8. The facility based standards for treating neonatal illnesses including sepsis management must be finalized, disseminated widely and implemented at all health facilities so that high treatment standards can be maintained across all health facilities providing neonatal sepsis treatment.

h. Inpatient Supportive Care for Sick and Small Newborns

Severely sick newborns with severe infections or who are too small to keep their body temperature, to breathe or to feed actively need full supportive in-patient care; this includes a number of interventions, including regular monitoring and assessments by health staff.

Priority Bottlenecks

1. National guidelines for In-patient care for severely sick newborns do exist but these do not fully cover supportive care for severely sick and small neonates.

2. There are inadequate financial resources available at various levels to provide the full range of services to provide inpatient supportive care for sick and small newborns. All the necessary equipment and services are only available at the tertiary level for e.g.: Oxygen concentrators, blenders, tubes and nasal prongs are not available at some station hospital, RHC and sub-RHC levels.

3. There are also many financial barriers for that prevent sick/ small/ LBW newborns to receive care at tertiary level facilities including both direct costs associated with treatment and other indirect costs.

4. Distribution of health facilities and trained competent health workers across the country is not equitable. Trained health workers and health facilities tend to be concentrated in urban areas and centres. Further, health workers that have received training on essential newborn care, Kangaroo mother care and breastfeeding are based only in the project areas.

5. Midwives are not authorised to provide IV fluids or IGT feeding for stabilisation of sick newborn as a part of their routine work.

6. There are no reviews/ clinical audit mechanisms to identify whether sick and small/LBW babies received the appropriate in patient and supportive care below the tertiary level hospitals.

7. Referral, communication and emergency transport mechanisms need to be strengthened.

Strategies

1. National standards and operational guidelines for provision of care for all neonatal conditions at different health care levels must be developed and implemented across the country. Support should be provided to upgrade facilities to make them *newborn friendly*.

2. All costs associated with treatment of serious neonatal conditions including inpatient care must be made a part of the free maternal and child health care services.

3. Scale up training of health care providers on managing newborn illnesses across the country. Ensure that projects which provide trainings to health care providers on managing newborn illnesses are strategically established in high burden settings where there have been limited inputs.

4. Provide refresher trainings to health care providers including midwives on fluid management, feeding support for sick neonates and scale up ENC, KMC and IMNCI across the country.

5. Midwifery training should be strengthened, duration of practical clinical work should be extended and there is a need to consider allowing them to administer IV fluids and IGT feeding under the supervision of a medical officer.

6. Support better communication, referral and triaging mechanisms for severely sick and small newborns. For e.g.: mobile-health technologies may help in this process. Innovative context specific solutions should be designed to improve access, affordability, quality, utilization, responsiveness and promote high standards of facility based care for newborns. This will include innovations in communication, emergency transport and provision of care to sick newborns.

i. National Level Health system and Cross cutting Issues

Priority Bottlenecks

1. National level procurement, supply chain, logistics management and distribution systems need to be strengthened for all RMNCH commodities and supplies. Although, there is some collaboration amongst partners, there is no official coordination mechanism/ working groups at the national level looking at commodity security.

2. Out of pocket expenses associated with the treatment of a sick neonate are high†††††and exact levels of MOH investment on MNH issues is not known. There is no national Health financing policy/strategy. Results based financing mechanisms do not exist in Myanmar.

3. Newborn health is not a separate budget line item and tends to get lost within the broader MNCH remit. It is difficult to monitor the investments that have gone toward newborn health in Myanmar.

4. An expert technical advisory group for newborn health under MNCH TSG does not exist in the country providing oversight and guidance for all newborn health issues in Myanmar.

5. Separate strategic plans for reproductive and child health development exist in Myanmar instead of having a single integrated national RMNCH strategy.

6. Information gaps are plenty esp. for data on the determinants of newborn health which limits programme planning and design of appropriate responses.

7. There are insufficient numbers of midwives across the country. The existing ones are overloaded with many responsibilities and sometimes also lack the necessary skills. Training of midwives has been project based rather than a part of the national effort to improve human resources for health.

8. Community ownership and participation for improving maternal and newborn health needs to be strengthened. Community awareness about health issues, knowledge of their rights and health system accountability is very poor.

9. A system for reviewing competencies and recertification of key personnel providing and newborn care does not exist as yet.

††††† This has also been validated by a number of previous reports such as the feasibility study on MCH voucher scheme 2010; feasibility study on Township Based Health Protection Scheme; JIMNCH lessons learned report.

10. Planning, supervision, mentorship and monitoring and evaluation of MNH programmes needs to be strengthened at all levels.

11. Although some indicators are included in HMIS such as percentage of newborn receiving breastfeeding within one hour of birth and newborn care coverage within three days after birth, many indicators are still left to collect in routine health information system. Data quality assurance system are in place but need to be strengthened. Disaggregated data by township is available at central level but not by health centres. Further disaggregated data by rural health centres and sub-centres is available only in the township.

12. Private sector is one of major providers for newborn health care services but there are no well-functioning mechanisms of engaging the private sector to leverage their strength and resources. Information about patients that go to the private sector for MNH services is not available.

Strategies

1. A national level mechanism for streamlining procurement, supply chain, logistics management and distribution systems need to be strengthened as a functional strategic pathway to MNCH for all. Designing an effective and sustainable supply chain system for drugs and other commodities is important and can be complex. A correctly run distribution system is one that keeps drugs in good condition, rationalizes drug storage points, uses transport as efficiently as possible, reduces theft and fraud and provides the required information for forecasting needs. This requires a good management of the system along with a simple but well-designed information system in place.

2. There is a need to develop a national health financing/ investment and implementation plan for scale-up of interventions proven to reduce maternal and newborn mortality in Myanmar. Donors are also encouraged to increase and target their funding to maternal and newborn health issues through innovative approaches such as results based financing and ensure that funding is predictable, consistent and responsive to national priorities and plans.

3. Newborn health should be prioritized within maternal and child health program so that it is a separate line item in the budget and has its own implementation plan.

4. Increase the capacity of the existing Child Health Working Group under the oversight of the MNCH TSG to function as technical expertise on newborn health.

5. Given the synergies between RMNCH, it makes senses to develop an integrated RMNCH strategy so that there are efficiency gains can be maximized.

6. The upcoming census and DHS offer many opportunities to close down information gaps for newborn health. Further research into determinants on newborn health including causes of death, care seeking practices in communities, quality of care and health facility assessments should be undertaken.

7. Partners should work with responsible authorities to develop rational, feasible human resource development plans with a focus on ensuring high quality training and appropriate skill mix amongst the health workers.

8. Promote participatory community based approaches, empowerment of local women and dedicate investments to improve knowledge and demand in the communities.

9. Review certification and accreditation processes for MNH service providers.

10. Strengthen planning, supervision, mentorship and monitoring and evaluation of MNH programmes needs to be strengthened at all levels.

11. Review and revise existing newborn health indicators in HMIS so that standard definitions are used, emphasize on data validity and data quality assurance and where possible improve system to collect disaggregated data.

12. Engage with the private sector in the provision of MNH services effectively.

7 Limitations

This review does not cover aspects of facility based care for newborn health in great detail.

8 Recommendations

8.1 Short Term Recommendations:

1. Integrate newborn action into existing RMNCH initiatives and efforts: This will be an easy first step to integrate newborn health across all existing plans, programmes and processes so that newborn health can be entry point for a better collective national response to RMNCH. This means incorporating newborn health messages, technical content, trainings, programmatic efforts and implementation standards across all programmes within the continuum of care for RMNCH. A detailed exercise should be undertaken to analyse the gaps across programmes, to explore in detail what is missing and to integrate the relevant technical content for newborn health.

2. Focus efforts on provision of appropriate care during labour, childbirth and the first days of life: This time period offers triple returns on investments and programmes targeting this time period should be prioritised by promoting safe, hygienic, institutional deliveries by skilled birth attendants and early post natal contacts (either at health facility or at home) with an emphasis on effective counselling during the early postnatal contact on healthy maternal and newborn care practices and behaviours. Increasing demand and improving access to quality institutional delivery services through innovative models will help in reducing preventable maternal and neonatal deaths.

3. Increase the capacity of the Child Health Working Group under the oversight of the existing MNCH TSG to function as technical expertise on newborn health with the responsibility of providing overall advisory, coordination and monitoring for the implementation of all neonatal health interventions in the country. This group will advise and ensure the overall technical quality of prevention, diagnosis and treatment strategies, approaches and interventions are appropriate for Myanmar and incorporate global evidence, emerging innovations and in-country experiences. This group will also oversee the finalization of a national community based package mentioned below.

4. Design, finalize and implement a nationally endorsed community based package that targets all the major causes of deaths in both mothers and newborns. Prioritise implementation of this package by all partners working in the country first targeting hard to reach and underserved areas of the country that have high burden of deaths. Ensure implementation strength by developing standard operational guidelines, a coordinated national plan for expansion and integrate CBNBC programme activities in all ongoing and upcoming opportunities for provision of comprehensive MNCH services in the country. Integrating this package of newborn interventions within all existing platforms and programmes that provide care for pregnant women, newborns and children will help to exponentially scale up newborn health interventions across the country.

5. Promote engagement of parents, families and communities: Education and information are key to empowering parents, families and their communities to recognise danger signs, seek early care for illnesses, increased institutional deliveries and demand quality care from the health system. All existing IEC materials should be reviewed for consistency of newborn care messages. They should use the same illustrations, tools and materials to communicate standard nationally endorsed messages. Participatory approaches using a variety of proven and effective programme communication methods including mass media should be used to create behaviour change and facilitate adoption of healthy maternal and newborn care practices.

6. Research: Further research into determinants of newborn health including causes of death, care seeking practices in communities, quality of care and health facility assessments should be undertaken in Myanmar. Rigorous evaluations of community based endeavors should be conducted. A rigorous evaluation framework should also be developed for the national community based programme once it is designed and piloted.

7. Refinement of the existing newborn health interventions:
    i. For newborn sepsis:
        a. In order to promote early treatment initiation, promote referral compliance and ensure that newborns with sepsis actually receive the care that they need. It is recommended that a permissive policy allowing midwives to provide Injectable antibiotics is provided and volunteers to dispense oral antibiotics is considered so that appropriate care for serious newborn illnesses can be provided in community settings using standard diagnostic and treatment algorithms and that treatment is provided free of charge. This should also be supported by increased investments in monitoring and supportive supervision so that high rates of treatment completion can be obtained and that volunteers and midwives are appropriately mentored.

b. The diagnostic and treatment algorithm for assessment of newborn infections/ Possible Severe Bacterial Infections (PSBI) needs to be updated according to the latest global standards and implemented with a greater focus on community case management in zero to one month age group. The existing algorithm and the standards have also not been properly implemented esp. for community case management in zero to one month age groups.

ii. For Birth Asphyxia: Although, community based cadres such as AMWs still conduct a majority of deliveries in rural Myanmar, they are not authorised to perform neonatal resuscitation. Simple protocols for birth asphyxia management are available globally and there should be a permissive policy environment allowing AMWs to use bag and mask in cases of asphyxia esp. in rural or hard to reach areas of the country. Referral linkages and coordination with tertiary facilities should be improved for this to happen. Training quality improvement with an emphasis on skill building and clinical practicums using simulation models should be utilised to improve skills and confidence.

iii. Prematurity is a major cause of neonatal deaths in Myanmar but existing plans and strategies do not include specific actions to avert those deaths through prevention and management of preterm birth including administration of antenatal corticosteroids. Training packages and protocols should be modified and implemented to ensure that midwives and AMWs identify prematurity, initiate appropriate management and refer to facilities. Feasibility / operational research models testing the effectiveness of health care providers (e.g.: midwives) administering antenatal corticosteroids could be undertaken in the context of rigorous monitoring and research.

iv. LBW and KMC: Although, LBW and KMC are covered in detail as a part of the Integrated Management of Newborn and Childhood Illnesses package, specific national guidelines for prevention and management of LBW babies including KMC and feeding support should be considered as LBW is a significant burden in Myanmar. It is recommended that appropriate national implementation guidelines and standards for KMC in facility and community settings including feeding support for LBW infants is developed for Myanmar and implemented.

v. Cord Care: Given the revised WHO recommendations, it is recommended that based on the context esp. in rural areas with high rates of home deliveries, national authorities may wish to review the evidence on chlorhexidine and make a decision accordingly.

8.2 Long term Recommendations:

1. A national level mechanism for streamlining procurement, supply chain, logistics management and distribution systems need to be strengthened in Myanmar as a functional strategic pathway towards quality maternal and newborn health care for all. Designing an effective and sustainable supply chain system for drugs, commodities and supplies is of utmost importance to make further gains in MNCH outcomes in Myanmar.

2. Quality of care provided at facility and community levels is essential to prevent mothers and children dying in Myanmar. Competent health care providers, particularly skilled birth attendants, are an essential requirement for providing care for both the woman and her newborn. Investments must be made to ensure that existing health workforce is properly trained, national standards and guidelines are developed, and disseminated, professional organizations are fully on-board with quality improvement initiatives. Government and partner efforts must ensure that health facilities are fully functional and the health workforce is well equipped and operate within the required policy framework to deliver high quality maternal and newborn care to the population that they serve.

3. Investment in monitoring and supportive supervision: It is important to have a robust monitoring system in place for monitoring national programme performance. Existing national HMIS systems must be strengthened. Any innovations introduced should have further stringent oversight. Utilising standardized indicators and developing performance targets can improve accountability and contribute to quality improvement of the system. Similarly, investing in the system to establish a functional supportive supervision system for community and facility based cadres will provide much needed support and will help to improve their individual performance. Annex six provides some suggested indicators for routine monitoring.

4. Creating a constituency around maternal and newborn health will make a huge difference to the progress on the ground and help generate leadership, political will and generate resources to expand intervention coverage. Examples from other countries for e.g.: HIV/ AIDS alliances, national White Ribbon alliance movements or safe motherhood networks have all shown exceptional results. Strong advocacy around healthy planned pregnancies for all, ensuring that all newborns make a healthy start in life and that they grow to fulfil their development potential will be important to mobilize political will, commitment and leadership to this issue. Further, at the local level, village leaders/ development committees should be more engaged in the process of implementation of the CBNBC initiative so that there is a lot of ownership and buy in from the start.

5. Finally, the ultimate aim should be to achieve universal coverage and equity in Maternal and Newborn health in Myanmar. Access to quality care during antenatal period, childbirth and postnatal period is marked by great inequities, affecting vulnerable and deprived populations, in both urban and rural settings in Myanmar. Closing this equity gap within population groups and areas of the country will ensure that many lives of mothers and newborns are saved in Myanmar.

9 Annexures

Annex 1: Community Based Newborn Care Programme (CBNBC) in Myanmar

1. Background

Each year, approximately 43,000 newborns die in Myanmar. Despite significant improvements, the Myanmar's under-5 and infant mortality rates are the second highest among ASEAN member countries, and the majority of these deaths are preventable. The latest estimates show that the neonatal mortality rate per thousand live births rate is 30 (2011) and that neonatal deaths contribute to 47% of all under 5 deaths (2011). The principal causes of neonatal mortality (within 28 days of age) are prematurity, birth asphyxia and sepsis, including pneumonia. Deaths are most common in home-delivered babies in rural areas. The best available local evidence is from the Nation-wide cause specific under five mortality survey conducted during 2002-2003, which showed that the majority of neonatal deaths (80%) were due to preventable causes such as prematurity/ low birth weight, sepsis and birth asphyxia. The five-year strategic plan for child health development in Myanmar (2010-2014) is the guiding document for newborn and child health in Myanmar. The key goal of the strategy is to reduce neonatal mortality to 16/1,000 live births by 2015. The targets for newborn health established by the strategy include:

- 80% of all newborns receive the community based Essential Newborn Care package.
- 80% of all low birth weight infants receive extra care during the newborn period.
- 60% of the families practice hand washing and provide appropriate feeding for children 0-23 months of age.
- 60% of infants 0-6 months are exclusively breastfed.

As evidenced by these explicit targets, newborn health is an important priority area for the Ministry of Health and hence the strategy emphasises on newborn health through the expansion of essential newborn care comprising of home visits for newborn

care, inclusion of neonate in the Integrated Management of Childhood Illnesses and regular child death review at all levels including audits in health facilities and hospitals. Further, the strategy also emphasises referral care for sick newborns and children in hospitals and Community capacity development/behaviour change communication for six keys community practices to empower the families in child care and promote early & appropriate care seeking during illnesses.

2. Rationale

Reduction of high neonatal mortality is an urgent priority for achieving MDG 4 in Myanmar. A considerable number of deliveries still occur at home and there is poor access and utilization of facility-based services, particularly in rural and hard to reach areas. Myanmar has had some experience in reduction of under-five mortality due to a variety of community based health programmes. An established primary health care system is in place and a cadre has been identified to provide home based newborn care which are promising signs for initiating a community based programme targeting neonatal mortality. The Lancet Neonatal Survival Series notes "Early success in averting neonatal deaths is possible in settings with high mortality and weak health systems through outreach and family-community care, including health education to improve home-care practices, to create demand for skilled care, and to improve care seeking. Family-community care has similar costs to outreach but greater potential effect. In general, clinical care services are more costly to implement than outreach or family-community services and also more challenging in terms of human resource management. The potential for postnatal care to have substantial effect, greater than that of antenatal care and similar to that of intrapartum care but at lower estimated cost, is noteworthy."

The assessment of Newborn health in Myanmar, MOH and UNICEF 2014 also recommended that, "There is a need to design, finalize and implement a nationally endorsed community based package that targets all the major causes of deaths in mothers and newborns. It recommends that the country prioritise the implementation of this package by all partners working in the country by developing standard operational guidelines, a national plan for scale up and integrate this action plan in all existing and upcoming opportunities to facilitate expansion of this package towards scale. Integrating this package of newborn interventions within all existing platforms and programmes that provide care for pregnant women, newborns and children will help to exponentially scale up newborn health interventions across the country."

3. Description

The Community Based Newborn Care Programme (CBNBC) is implemented by the Ministry of Health with support from UNICEF. It consists of a range of interventions

with an expanded role of auxiliary midwives and volunteers‡‡‡‡‡. The CBNBC programme was initiated in five townships in 2011 and was expanded to 11 townships in 2012. Till date, 825 volunteers have been trained so far across the 11 townships. As a part of the programme, health volunteers make postnatal home visits to provide newborn care services irrespective of where the newborn was delivered. It emphasizes on early postnatal contact with the health care providers; for all normal deliveries, the auxiliary midwives and trained volunteers make 3 postnatal visits on Days 1, 3 and 7. For newborns with complications such as preterm or LBW they make five postnatal home visits on Days 1,2,3,7 and 14. During these visits, the volunteers promote and support early and exclusive breastfeeding; help to keep the newborn warm by promoting skin to-skin care; Promote hygienic umbilical cord and skin care; Assess for danger signs§§§§§ and counsel on their prompt recognition and care seeking by the family; Promote birth registration and timely vaccination according to national schedules and identify and support newborns who need additional care (e.g. LBW, sick, mother HIV infected).

4. Goal

To reduce Neonatal Mortality Rate in Myanmar.

5. Objectives

a. To provide home visit for mothers and newborns that live in areas not accessible by basic health staff through trained health volunteers irrespective of the place of delivery.

b. To provide and promote basic newborn care practices such as Exclusive Breastfeeding, early initiation of BF, thermal care, hygienic skin, cord and eye care.

c. To identify and care for Preterm and Low Birth Weight babies with an emphasis on Kangaroo mother care and feeding support.

d. To recognize danger signs of mothers and newborns.

e. To facilitate early referral of mothers and babies with danger signs

‡‡‡‡‡.Selection criteria for volunteers includes the following: Volunteer should be a Female, should be from a Village that doesn't have a sub-centre, she is interested in Social work and she has at least Secondary level education

§§§§§Danger signs include: not feeding well, reduced activity, difficult/fast breathing, fever or feels cold, fits or convulsions, yellow coloration of skin, pus from umbilicus/eye, redness around umbilicus, skin pustules

6. Geographic Coverage

The community based newborn care programme is currently implemented across 11 townships across Myanmar and is reaching approximately 8492 newborns and 10,617 mothers across the country. Table 1 below provides further details on the beneficiary count and geographic coverage of the CBNBC programme.

Table 1: Geographic Coverage and Beneficiary Count of the CBNBC programme

State/Region	Township	# of neonates reached	# of expected pregnancies
Mandalay	Myingyan	1359	1699
	Kyaukpadaung	1464	1830
Bago	Oaktwin	733	917
Tanintharyi	Kawthaung	1200	1500
	Dawei	277	347
Shan	Lashio (North)	242	303
	Taunggyi (South)	391	489
	Kyeng Tong (East)	320	400
Mon	Thahton	798	998
Chin	Tedim	1240	1549
Kayin	Phaan	468	585
Total		8492	10617

7. Project activities

1. Trainings

Health Volunteers for CBNBC receive training on CBNBC using simple training materials adapted from the WHO Essential Newborn Care Course. The training materials include a 1) Facilitator Guide, 2) Trainees' Manual and a 3) Flip Chart (Counselling Card). The training materials cover all the key topics for the provision of essential newborn care, emphasize on communication skills, the importance of good hygiene and also outline key tasks to be conducted by volunteers during postnatal visits, identification of danger signs and prompt referral of sick babies and recording & reporting responsibilities. The trainings are provided through a Training of Trainers (ToT) cascade approach with trainings at the central, township and the community levels. Table 2 below provides further details of the inputs in training of health care providers as a part of the CBNBC programme.

Table 2: Training inputs provided for the Community Based Newborn Care programme.					
Level	Cascade	Trainer (# of trainers)	Participants (# of participants/per batch)	No. of participants trained till review time	Duration
Central	Master ToT	Senior level paediatricians, Central training team	Township medical officer, Paediatrician, Health Assistant 1, township health Nurse and Health Assistant: *(30 participants per batch x 2 batches conducted so far)*	60	3 Days
Township	Training to BHS	Township Training Team Members such as Township medical officer, Health Assistant 1, township health Nurse and Health Assistant, Paediatrician.	BHS: Health Assistant, Lady Health Visitor, Public Health Supervisor- 2, Midwives. *30- 40 participants per batch x 2 batches in the township x 11 township*	*60-80 in each township*	3 Days
Township	Training to volunteer	Township Training Team Members such as Township medical officer, Health Assistant 1, township health Nurse and Health Assistant, Paediatrician	Health Volunteers for CBNBC (AMW, CHW, Newly recruited CBNBC volunteer) 40 participants per batch x 2 batches per township 11 township	60-75 in each township x 11 township	5 Days

2. Provision of essential commodities and supplies

In addition to training health care providers, the CBNBC programme also provides health care providers with some essential commodities and supplies. Some small non –monetary incentives such as caps, bags, are also provided to them as recognition of

their services. The inputs in commodities and supplies provided to health care providers include the following:

1. Equipment: Salter spring scale with a weighing sling, thermometer and ARI timer.
2. Recording and Reporting forms:
    a. CBNBC Volunteer (AMW/CHW/newly trained Health Volunteers for CBNBC): Newborn Care register, Newborn Care Referral Register, Counselling Card, Newborn Care Card, Referral Form, Monthly Report Form, and job aids
    b. Basic Health Staff: (Midwife, Health Assistant, Lady Health Visitor): Supervision Checklist, Monthly report form (compilation of CBNBC volunteer work.
    c. Township level (Township Medical Officer and Township Health Nurse)- Supervision Checklist and the monthly report form.
    d. Central Level: Newborn Care register, Newborn Care Referral Register, Counselling Card, Newborn Care Card, Referral Form, Monthly Report Form

8. Implementation process

The implementation of the CBNBC programme is led by the Women & Child Health Development section of the Ministry of health and the following approach is utilized for the roll out of the programme:

1. **Advocacy** at central level on CBNBC: Advocacy for newborn health is done at the central level through national level advocacy events, newborn networking and coordination meetings including the national child survival forum. The national technical working group on child health and development is actively engaged in this process and there is high level representation by the MoH and partners. Progress with CBNBC implementation and discussion on relevant newborn care issues happens during these meetings.
2. **Village selection and volunteer selection** at township level: The selection of villages for CBNBC implementation occurs through a consultative process with a focus on reaching underserved villages in high-mortality townships. During the initial phase of CBNBC implementation, the programme was introduced in 20 per cent of underserved villages in 11 selected townships.
3. **Training of Trainers at the central level** to develop pool of township level trainers: The participants of the central level Training of Trainers are charged with conducting the trainings at the township level. Usually, the township training team comprises of five trainers (District/Township Medical Officer, Township health assistant, Health Assistant- 2, and Public Health Supervisor – 2). They also receive support from state/regional health office as required.

4. **Multiplier trainings for Basic Health Staff at the township level:** This is done over three days and is led by pediatricians or Township Medical Officer from the Township Training team. The trainings cover all the contents that will be taught to the volunteers so that basic health staff are familiar with the content and can monitor, supervise and support the volunteers.

5. **Multiplier trainings for health volunteers by township training team:** This is done by the township training team who received TOT over five days and also includes some participants from local NGOs and project staff who support in the implementation of CBNBC. Knowledge and skills are tested before and at the end of the trainings and participants need at least 65 % scores to fulfill the requirements. The training details have already been discussed in detail under the training section 7.1.

6. **Provision of newborn care materials and supplies.** Volunteers and basic health staff receive all the essential equipment and supplies as outlined in section 7.2.

7. **Advocacy activities at the township level.** This is a half day event at the township level where approximately 40 participants are invited which includes township level influential/s and focal persons. Village level authorities and leaders are also invited to attend the trainings. There is an orientation to all the participants on the CBNBC programme and also a discussion on the role of the Health Volunteers for CBNBC.

8. **Introducing health volunteers to the community members:** After receiving the trainings the volunteers are introduced to the community and their new knowledge and skills in newborn care is presented to the community members. This helps to provide community recognition of the volunteers work and also create a sense of ownership of the programme.

9. **Provision of newborn care services including referral:** After the receipt of the training, essential commodities and supplies (including reporting and recording forms), the volunteers provide newborn care services in their communities. If volunteers identify danger signs they liase with midwives or basic health staff and help to facilitate timely referral for babies with danger signs to higher level facilities.

10. **Supervision and monitoring of volunteers** by assigned health staff. Volunteers are supervised at least once a month by midwives and once every quarter by township supervisors. A supervision checklist is also used during these monitoring visits.

11. **Recording and reporting by volunteers:** Volunteers are also tasked with recording and reporting responsibilities. This includes filling up the newborn care card for every newborn visited and reporting to the supervisors (LHV/ MW) on a monthly basis using the monthly reporting form.

12. **Feedback:** The supervisors provide feedback and supportive supervision to the volunteers and also identify and resolve any issues that may arise during CBNBC implementation.

9. Monitoring

A comprehensive monitoring, supervision and evaluation system has been developed which includes the following components. Currently, as a part of regular monitoring and supervision, volunteers report to supervisors (Midwives) monthly which are compiled in RHCs. The compiled RHC reports are then submitted to Township every month. Compiled Townships Reports are then sent to the Central level on a quarterly basis. The existing tools used for monitoring are provided in Table 3, 4, 5 and 6 below.

Table 3: Format for the monthly report by the CBNBC vounteer

Monthly report form by CBNBC volunteer

Name of Health volunteer_____

Village name_____

Name of SubRHC_____

Month	no. of newborn in her responsible area	No. of newborn to whom care was provided	No. of newborns who	No. of referrals	Cause of referral												Remarks
					Unable to feed	Convulsion	Fast breathing	Chest indrawing	Hyperthermia	Hypothermia	Reduced limb movements	Jaundice up to extremities	Umbilical sepsis	Pus discharge in eyes	Skin pustules	Low body weight	

Table 4: Format for township level compilation form			
CBNBC: Compiled report collected from Township Focals		Township name_____	
	Township name…….	**Reporting month**	
No	Month/Yr.		
1	Number of functioning Health Volunteers for CBNBC		
2	Number of live births in the coverage area during last reporting period		
3	Number of newborns who received home visit by volunteers (at least one visit within 7 days after birth)		
4	Number of newborns who received complete home visits by volunteers (3 visits in 7 days after birth for normal babies/ 5 visits in 14 days after birth for small babies)		
5	Number of newborn referrals to hospitals/ health centres (# of newborn referred)		
6	Reasons of referrals		
a	*Not able to feed or stop feeding*		
b	*Convulsion*		
c	*Fast breathing*		
d	*Chest infection*		
e	*High temperature (37.5 Degree Celsius or more)*		
f	*Very low temperature (35.4 Degree Celsius or less)*		
g	*Only moves when stimulated or does not move even on stimulation*		
h	*Yellow soles*		
i	*Redness of umbilicus or draining pus from umbilicus*		
j	*Pus discharge from eyes*		
k	*Skin infections (boils)*		
l	*Low birth weight*		

Table 5: CBNBC Monitoring Checklist

Name of volunteer …… **Date……**

S.No	Newborn Care by trained Volunteers (Newborn: Child from the time of birth through the 28th day of life)	Yes	No	Remarks
1	Availability of spring scale			
2	Availability of training material (COUNELLING CARD)			
3	Availability of IEC material (DANGER SIGN)			
4	Availability of 1) Newborn Care register and 2) Referral register			
5	Availability of 1) Newborn Care card and 2) Referral form			
6	Knowledge of danger signs in newborn correctly** (8 SIGNS & ABOVE)			
7	Knowledge of weight measurement cut off point for identifying normal, low birth weight and very low birth weight			
8	Knowledge on frequency of home visits for newborn care (DAY 1,3,7)			
9	Count the respiratory rate correctly (plus or minus 3)			
10	Use and read spring scale correctly			
11	Measure and read the body temperature correctly			
12	Newborn Care register and Referral register filled correctly			
13	Supplies replenished as planned			
14	Visited by supervisor minimum once during last three months			
15	Monthly report(s) prepared and submitted to supervisor monthly			

Township ……

RHC……SubRHC……Village……

7	Remarks		

Table 6: Compilation form of Data from individual volunteers (In the last 3 months…)

Village Population	No. of Pregnant women	Total deliveries	Hospital/Clinic delivery	LHV/MW delivery	AMW delivery	TBA delivery	Life Birth	Still Birth	Newborn care number	NBC referral	Successful referral	Referral reason	Newborn saved by referral	Total Newborn death	Remarks

10. Project performance so far

The section below highlights the CBNBC performance till the time of the review based on monitoring data for the last three months and findings from six implementation townships(Dawei, Hpa-An, Taunggyi, Kyeng Tong, Lashio and Tedim). Aspects of programme performance are discussed under the following headings: availability of supplies, Availability of trained providers, Quality of services, referral for services, Utilization of services, Supervision, Reporting and other findings.

a. Availability of supplies

Overall, the availability of supplies has been quite good across the six implementation townships with an average 93% of volunteers having counselling cards and registers with them during the monitoring visit across the six townships. Similarly, 95% of volunteers across all the six townships had essential supplies (spring scale, thermometer and timers)

b. Availability of trained providers

There is good availability of trainers across the six townships esp. for areas that are underserved and remote. However, trainings need to be scaled up across the entire township so that all the villages of the township that are underserved and remote have trained Health Volunteers for CBNBC. Monitoring data up to the end of 2013 indicates that two training sessions had been completed in each township till date and 266 volunteers have received training on CBNBC. High proportions (96 %) of volunteers are still working actively for CBNBC related activities (data available till August 2013). The attrition rate is low with an average attrition rate of 4%.

c. Quality of Care

Provision of high quality of care is an important prerequisite for achieving impact at the population level. Findings from the field visits and monitoring data indicate that greater inputs are needed to improve knowledge and skills of volunteers on newborn care. Skills components such as measuring the temperature, weighing the newborn, counting the respiratory rate and knowledge components such as recognition of danger signs need to be further emphasised so that quality care can be provided at the community level.

d. Referral service

Referral to health facilities after identification of danger signs has been successful across all the six CBNBC townships based on the available data and findings of the field visit. Monitoring data from the last three months indicates that all the children referred from townships were successfully referred to health facilities either private or

public. However, it is hard to estimate if there is any under recognition of neonatal illnesses in the community or if all the babies that were referred did end up going to the health facility promptly i.e. the time interval between identification of danger signs, referral and the time when they actually received care.

e. Levels of Utilization

In terms of utilization and awareness of CBNBC services, monitoring data from the past three months indicates good progress. The coverage for three PNC visits across the six townships is 87% and this was also validated during the field visit. During the field visits, it was observed that in a majority of cases the volunteers actually visit the newborn every day for the first two weeks and do not limit their visits to the three prescribed postnatal visits. Volunteers also provide PNC visits to the newborn irrespective of the place of birth of the type of birth provider. Good practices such as strong linkages, good coordination between volunteers and TBAs and proactive advocacy efforts by Basic health staff to engage village leaders in the implementation process has led to high coverage at implementation sites.

f. Awareness of CBNBC Services

The majority of villagers (85%) in the six townships were also aware that volunteers had been trained in CBNBC and provided newborn care services. Generally, all the villagers tend to know the AMWs in their village as AMWs provide a range of services and are easily accessible to villagers. AMWs have proven to be a suitable cadre for CBNBC implementation. The Ministry of Health has identified the scale up of AMW training as a priority to strengthen Human Resources for Health. This plan aims to cover one AMW per village across the country. The MoH's target on AMWs clearly highlights the importance placed on this cadre in extending access to essential maternal, neonatal and child health services in Myanmar and their role in newborn care should also be prioritised.

g. Supervision and Reporting

Effective supervision and reporting are essential components for monitoring programme implementation. Monitoring data shows that a total of 187 supervisors have been trained in the six townships where the CBNBC programme is being implemented. On average, 58% of Health Volunteers for CBNBC in the six townships reported that they had received a monitoring visit during the past three months and 47% of volunteers reported that they had submitted monthly reports. Findings from the field visit also indicate that much more needs to be done to support recording, reporting and supportive supervision of the Health Volunteers for CBNBC.

h. Other Findings

• Selection of volunteers:

Most of the volunteers trained as a part of the CBNBC programme are AMWs (72%). This is a good practice and needs to be strengthened as CBNBC is scaled up across the country. AMWs are used to communicating complex health messages to mothers and caretakers for a range of programmes and seem comfortable in performing key tasks under CBNBC. Non-AMW volunteers often face some challenges in taking care of newborns because they are not adequately experienced. Usually, these non AMW volunteers are young so families or caregivers may also not trust them right away. They need time to establish trust and build a rapport in the community.

• Performance Management:

Most of the volunteers in CBNBC are AMWs and it seems that AMWs are very dedicated and committed to their work as a part of the CBNBC programme. Retention of non AMW volunteers can sometimes be problematic. As most of the non AMW volunteers are young females, there are many instances when they have to stop their involvement in CBNBC as they tend to relocate after marriage. Mechanism to incentivise the work of volunteers either through financial or non-financial incentives may be considered to improve their performance. Non-financial incentives may include recognition/ awards to volunteers for their services, a plaque outside their home which highlights their contribution to neonatal and child health, opportunities for travel and future trainings, access to free health care and a mobile telephone (noting the rapidly expanding mobile telephone market). Strengthening linkages between the senior leaders such as health committee members in the village and volunteers and recognition of volunteer's services by community influential/s will also have a good impact on their performance

• Communication and social mobilization:

Communication and social mobilization efforts have also been a part of the CBNBC response. This has generally included pamphlet distribution on danger signs to mothers and some IEC events around health promotion. Education and information are key to empowering parents, families and their communities to recognise danger signs, seek early care for illnesses and demand quality care from the health system. Participatory approaches using a variety of proven and effective programme communication methods need to be used to create behaviour change and facilitate adoption of healthy maternal and newborn care practices. During the field visits, one of the most promising approaches was observed in Townships implementing the *Seven Things This Year initiative* and integration of newborn health

messages with this initiative should be considered. Further, other family members including husbands/ caregivers and village leaders and influential/s also need to be targeted as a part of the communication and social mobilization effort of CBNBC. This is an important gap at the moment.

- **Coordination:**

Effective coordination between midwives and volunteers is critical to the success of the CBNBC programme. Many good examples of coordination between both these cadres was also observed with the midwife and the AMW working as part of a team to provide safe delivery and newborn care services. This coordination should be strengthened further.

11. Future direction

1. Trainings

There is an urgent need to scale up CBNBC trainings and also improve training quality. In the old townships where CBNBC has already been implemented, remaining volunteers should be recruited and trained using standardized training management guidelines. Refresher trainings with an emphasis on knowledge and skill building should be provided to front line health workers who are having problems. On the job trainings should be provided to newly recruited/ or transferred in staff at CBNBC townships so that they are aware on the protocols and guidelines. Trainings for traditional healers and drug sellers may be considered as many people still seek their services. Future trainings should also be introduced in a coordinated fashion across other high burden/ new townships where CBNBC will be implemented. Appropriate training and scale up plans should be developed in consultation with all the implementation partners which will help to prevent duplication, leverage a better coordinated collective response and make cost savings.

2. Strengthen community participation

Active community participation including that of village leaders should be encouraged and established during all stages of implementation of CBNBC. Strengthening linkages and networks between village committees and volunteers, communities, and health care facilities are important steps to involve the wider community and have already shown promising results in the six townships. CBNBC should build on established structures within a community, that are socially inclusive, and that include community members in planning, evaluation and implementation of CBNBC. This will help to ensure ownership of the programme,

better implementation, strengthen accountability and support from community influential/s will be useful in resolving any unforeseen problems that may arise during implementation.

3. Demand Creation Activities

There needs to be a continued focus on improving knowledge and raising awareness about healthy newborn behaviors at the community level. Harmful socio-cultural practices should be targeted through multiple channels using standard consistent messaging about healthy behaviors and practices. Information, Education and Counseling to promote early care seeking for neonatal illness needs to be strengthened. Other members of the families including husbands and caregivers need to be involved in this effort. Communication for Development initiatives in Myanmar such as the *seven things this Year* provide an excellent platform to integrate newborn health messages across the country and should be pursued. Appropriate demand creation and programme communication activities should be designed with consistent messaging at regular intervals.

4. Support Frontline Health Workers

Volunteers are the main agents of community-based identification, education and counselling for newborn health and mechanism to incentivise them will be useful to prevent attrition, sustain motivation, and help volunteers meet their obligations. Incentives maybe financial (e.g. Transport allowance), non –financial (e.g., public recognition, provision of some materials) or in-kind (e.g., access to free health care). Some of these innovative strategies to incentivise volunteers may be considered. There is also a need to improve monitoring and supervision of volunteers by basic health staff esp. in hard to reach or poorly performing areas. Regular refresher trainings at the township level will help to improve knowledge and skills of basic health staff and volunteers. In some contexts, there may be a need to recruit additional Basic Health Staff to support with programme implementation. Performance management of these front line workers is of utmost importance in ensuring programme implementation strength and can only be done with a strong emphasis on monitoring and supervision.

5. Strengthen Monitoring, Learning and Evaluation

Monitoring and Supervision helps sustain interest and motivation and reduces the risk of attrition of volunteers and basic health staff. It also helps to prevent stock outs of essential logistics, supplies and equipment at all levels and needs to be strengthened. Given the low rates of reporting and recording across the various townships, there is a need to review and simplify existing recording and reporting tools and provide further refresher trainings on recording and reporting at all levels.

Appropriate indicators and tools need to be developed which provide all the required information._Where possible, indicators should provide information on the poor and marginalised sections of the communities so that appropriate responses can be designed. Monitoring data should be used to drive programme implementation and help make midcourse adjustments. Relevant data management and data quality assurance guidelines should be developed at Sub-centre, Rural Health Centre and township level.

6. Programme Evaluation

Given that there is already considerable experience of CBNBC programme implementation over the past two years, an evaluation of CBNBC is recommended to explore in detail aspects of the programme which have worked and which have not worked so far. This will help to further refine and strengthen CBNBC programme so that an impact can actually be seen at the population level once CBNBC is being implemented at scale. Reducing neonatal mortality is a key challenge for Myanmar and high quality programme implementation will help to achieve these targets. The objectives of the evaluation could be to:

a. To evaluate if CBNBC is the best-fit model for Myanmar in terms of operational feasibility, contributing to reducing mortality and its cost effectiveness.

b. To document and review the evolution of CBNBC and assess packaging of interventions, implementation modality, training approach, and monitoring of the program in terms of inputs, process and outputs.

c. To assess each components of the programme in pilot townships in term of coverage and quality of care.

d. To assess the management of the program planning and implementation process.

e. To document implementation experiences, good practices, missed opportunities and provide recommendations for future improvement

7. Secure financing

To achieve an impact, CBNBC programme needs stable, predictable financing to be scaled up across the country. Adequate resources are needed to maintain technical quality during implementation and programme expansion. Further, Indirect costs of care-seeking (e.g. transport costs, loss of income, and cost of treatment) play a major role in the unwillingness of community members to seek

care for neonatal illnesses. Strong advocacy by partners to increase financial envelope for CBNBC implementation will go a long way in improving access and utilisation of CBNBC services by the community.

8. Strengthen effective referral systems to facility-based care

Community based programmes are an interim measure to in order to reduce maternal and neonatal deaths. Well-funded and functioning hospitals and clinics are essential complements to successful community based programmes because they provide services that cannot be safely replicated elsewhere, such as emergency obstetric and neonatal care and care for serious neonatal illnesses. It is important to strengthen aspects of facility based care for neonates together with expansion of CBNBC in newer townships.

9. Integration of newborn health interventions

Integration of newborn health across all existing plans, programmes and processes is recommended so that newborn health can be entry point for a better collective national response to RMNCH. This means incorporating newborn health messages, technical content, trainings, programmatic efforts and implementation standards across all programmes within the continuum of care for RMNCH.

Annex 2: Human Interest Stories

Saving newborn lives through Kangaroo Mother Care in Myanmar

When 18 year old **May Aye Myint** was pregnant with her first baby, she was visited by an auxiliary midwife in her village in Thaton township. This was a crucial time for May Aye to receive information on the benefits of eating a nutritious diet, consuming Iron and Folic acid tablets and visiting the health facility at least four times during the antenatal period. The auxiliary midwife also counselled May Aye in preparing for her upcoming delivery emphasizing the importance of going to a health facility for delivery. However, on the day of her delivery, May Aye only rushed to the hospital after attempting to deliver at home with the help of a traditional birth attendant. Thankfully she was received by the same midwife, Yah Min, who had examined her during her antenatal check-ups at the health facility, and May Aye gave birth to a beautiful baby boy.

Earlier that month, the midwife, Yah Min had received a five day training on Community based new-born care programme provided by the Ministry of Health with UNICEF's support. As a result of her training, Yah Min was able to accurately weigh the baby using a salter scale she had received and quickly identify that the baby had low birth weight. Yah Min counselled May Aye on the special care required for low birth weight babies to prevent them from falling ill and becoming vulnerable to death. Yah Min taught the new mother on Kangaroo mother care – a position where the mother's chest and the baby's chest are in close contact so that the baby's temperature can be kept stable and breastfeeding is also encouraged. This is a simple, low cost method which has been proven to prevent newborn deaths by helping to maintain body temperature, encourage frequent breastfeeding and also strengthen the bond between mothers and their infants.

Yah Min recalls, "*Now that I have received training on newborn care, I feel much more confident while handling sick newborns and have also helped to save the lives of many babies in my community who are sick during the first month of life. I also counsel young mothers in my community to always deliver at a health facility and plan well for their upcoming pregnancy so that they don't attempt to deliver at home like the majority of women in our communities!*"

As taught during the newborn health trainings, Yah Min continued to visit May Aye and her baby at their home five times after they were discharged to monitor the status of the child and assess the presence of any danger signs that the baby may develop. Over the course of two weeks, the frail child's condition gradually improved as a result of the special care that he was receiving. He started to gain weight, his appetite improved, he became less irritable and as active as the other children of his age group. Yah Min attributes this successful example to the knowledge and skills that she received as a part of the Ministry of Health and UNICEF's initiative to save newborn lives.

Improving Maternal and Newborn survival through community based approaches in Myanmar:

Kyauksitkan Village, Kyaukpadaung Township, Myanmar
September 2013

On a sweltering hot day in September, we finally reached Kyauksitkan village after driving through difficult and muddy terrain. We were deep in rural Myanmar. I was told that access to the village become difficult during the rainy season and it had only been two years that a motorable road had been built which had changed life considerably for the village. We were there to visit Ms. Win Maw San; an auxiliary midwife (AMW) who had received training on community based newborn care (CBNBC) through the support of Women, Child Health and Development section under the Department of Health of the Ministry of Health and UNICEF Myanmar. We were warmly welcomed by happy faces of her family and offered some fresh fruits and Chinese tea at their traditional Burmese home. At first glance, Win Maw San was a shy, petite girl dressed in her auxillary midwife's uniform but once she started talking she came across as a confident, socially conscious and personable young woman. After pleasantries had been exchanged and the purpose of our visit to her home been explained by a local colleague, she gradually opened up to us and shared her life story with us. Her mother had passed away when she was four years old and financial difficulties meant that her family could not afford to send her to school beyond the eighth grade. Although, she was the brightest amongst her peers, the fortunate ones who came from the better off families in the village did manage to complete their schooling and some of her peers had even become engineers and teachers. Despite being young, Win Maw San had been through considerable challenges in her life, not uncommon in this part of South East Asia. After leaving school, she enrolled in a vocational training programme and worked as a tailor for many years to supplement her family's income.

When she was nineteen, a UNDP grassroots project in her village was recruiting local women to train as auxiliary midwives. Although, this was a voluntary commitment without the premise of any future financial gain, Win Maw San was interested to participate in the training and become a health promoter for her village. Given her traditional Buddhist upbringing and desire to serve her society, she requested village authorities to nominate her to attend the training. After completing her training, she now works closely with the government midwife posted at her local health facility and has so far helped the midwife conduct 40 safe deliveries in rural communities. Wim Maw San provides counselling, health education and preventive care to 380 households providing these services for three thousand people in her village. She says, "Before I received the training, I was a child but now I am a mature young woman who has been able to make a substantial contribution to my community."

Pic 1: Auxillary Midwife Wim Maw San who received the CBNBC training

UNICEF Myanmar supports the Ministry of Health to implement a community based newborn care (CBNBC) programme in 11 townships across Myanmar. It employs innovative strategies such as training local women to become Health Volunteers for CBNBC. These Health Volunteers for CBNBC are primarily auxiliary midwives that have received six months training on basic health care issues and after CBNBC training are empowered to become health promoters and newborn health champions in their village. These women go around from house to house providing counselling and health education to local village women so that they have better pregnancy outcomes and maternal and newborn deaths during labour & delivery and postnatal period are prevented.

WHO and UNICEF recommend early postnatal visits at health facilities by trained health workers for all postpartum women and their newborns. The recommendations are that for all home births a visit to a health facility for postnatal care should be made as soon as possible. In countries such as Myanmar where access to facility based care is limited, recommendations are to make at least two home visits for all home births: the first visit within 24 hours and the second visit on day 3. If possible, a third visit should be made before the end of the first week of life (day 7). During these visits, the Health Volunteers for CBNBC provide basic care for all newborns including promoting and supporting early and exclusive breastfeeding, keeping the baby warm, increasing hand washing and providing hygienic umbilical cord and skin care, identifying conditions requiring additional care and counselling on when to take a newborn to a health facility. Newborn babies and their mothers are also examined for danger signs

that may occur following childbirth. At the same time, Health Volunteers for CBNBC also teach families on identification of danger signs and the need for prompt care seeking to a health facility in case any of these danger signs are present.

Dr. Myint Myint Than, Deputy Director of the Women, Child Health and Development in the Ministry of Health says that her department's strategy is to promotes universal access to antenatal care, skilled birth attendance and early postnatal care so that preventable maternal and neonatal deaths do not occur in Myanmar. She says that neonatal mortality is an important challenge in Myanmar as 46000 newborns die annually in Myanmar during the first month of life. She says, "in order to reach these babies that often die without ever coming into contact with the health care system, we need community based innovative strategies so that we can actually reach places where babies are dying, that is, at homes in remote, hard-to-reach, rural areas of the country"

Ms. Wim Maw Saw received the CBNBC training at Kyaukpadaung township hospital for five days which also included *hands- on practical sessions* at the health facility where she learned about examination of danger signs in mothers and newborns during the crucial postnatal period. She is positive about the training outcomes and feels that as a result of the CBNBC training, her confidence on technical issues has improved and her standing and credibility in her village has also benefitted. Despite being young, villagers place a lot of trust upon her as she can accurately identify danger signs and works closely with the midwife to facilitate early referral at health facilities for definitive management of common newborn illnesses. Whenever a woman in her village now becomes pregnant, families actively seek her out to inform her of a new pregnancy in the village. She makes home visits to the pregnant woman's house, registers the pregnancy, provides counselling on antenatal and safe delivery care and provides basic health and nutritional counselling to families. As she works under the close supervision of the local health facility based midwife, she also supports in the distribution of Iron, Folic Acid and Vitamin B1 tablets free of cost to the pregnant woman during antenatal visits to counter any nutritional deficiencies and improve pregnancy outcomes. Wim Maw Saw keeps a meticulous record of every pregnancy in her village, informs the midwife of the expected delivery dates and encourages women to deliver in health facilities. This is crucial in countries like Myanmar where up to eighty percent of women deliver at home. For any home deliveries, she supports the midwife in conducting safe deliveries at home ensuring that clean delivery kits are used, hygienic procedures are followed and helps to register these home births so that every birth is recorded and that every newborn has an identity. Further, she also supports the midwife in implementing priority national programmes such as immunisation, tuberculosis screening and supports in birth and death registration efforts in her village. When

asked what her proudest professional achievement has been so far, Wim Maw Saw proudly shows off her referral record for a baby that she diagnosed as having increased respiratory rate (equal to or >60 breaths/min) and says her proudest moment was when the baby's mother thanked her profusely for saving her child's life attributing Wim Maw's prompt diagnosis of her baby's illness and early referral to the rural health centre for saving the baby's life.

Wim Maw Saw has an equally busy schedule at home, each day begins early at 5: 30 am starting with a prayer to Buddha, after which she completes all the household chores, cooks for her entire family of six, supervises farm hands that come to work in the family's plot of land and cuts the grass to feed the family prized cows. In her free time, she also completes her voluntary work and also supports the midwife in implementing a range of public health duties. When asked about her future plans, she replies that she would like to receive more training on maternal and child health related issues so that she can further contribute to improving the health and nutritional status of her village. She is encouraged that her family has been very supportive of her dedication to social work and community service and villagers also acknowledge her efforts. Although, her family financial situation has improved considerably over the past few years she feels that she is now too old to go to school and would be most interested in being involved with socially relevant initiatives. "If I find the right boy, I may also get married," she says.

Annex 3: Mapping of Newborn Health Interventions in Myanmar

Mapping of Newborn health interventions in Myanmar

Preliminary findings for discussion

Presented by:
Venue:
Date:

Outline

- Mapping template
- Minimum standards for NBH interventions
- Response Rates
- Who & What
- Where
- Ongoing &anticipated activities
- Research planned
- Limitations

Mapping Template

Included information on the following aspects:

- Current activities in newborn health: Individual oriented clinical services (Township, station, RHC, SRHC)
- Home/Community Based Services: Community/Family Oriented Services, Outreach (population oriented scheduled services)
- Anticipated Activities (2014 onwards) and
- Planned Research activities

Minimum standards for NBH interventions

Intervention	Home / Community Based Services		Individual oriented clinical services	
	Family Oriented community based services	Population oriented schedulable services	First level health facility based services	Referral level services
New Born Interventions				
Tetanus immunization during pregnancy				
Hand washing by mothers/care taker				
Home visits in post natal period				
Early and exclusive breastfeeding				
Cord care				
Protect from hypothermia				
Identification and care of LBW infants				
Early recognition of newborn sickness and referral				
Exclusive breastfeeding for infants up to 6 months				
Promote play and communication activities				
Resuscitation of asphyxiated newborns				
Management of neonatal infections				

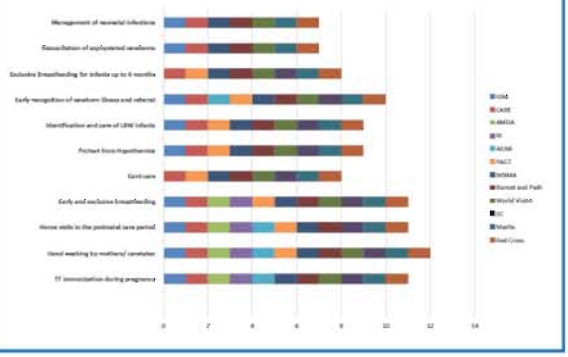
Ref: Table 9 b, page 44; Five year strategic plan CHD (2010-2014)

Response Rate

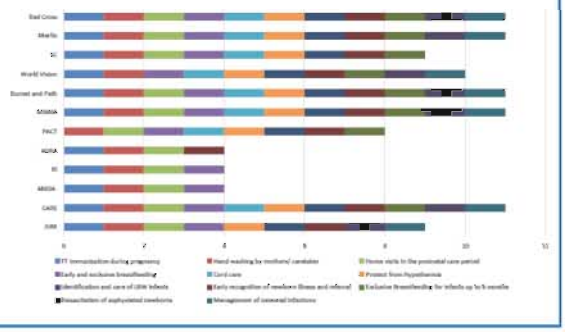
- Responses obtained from 13 organizations so far (IOM, CARE, AMDA, Relief International, ADRA, PACT, MNMA, Burnet and Path, World Vision, SC, Merlin, Red Cross)
- Response Rate (13/ Total)

Who &What?

Status of implementation of various NBH interventions

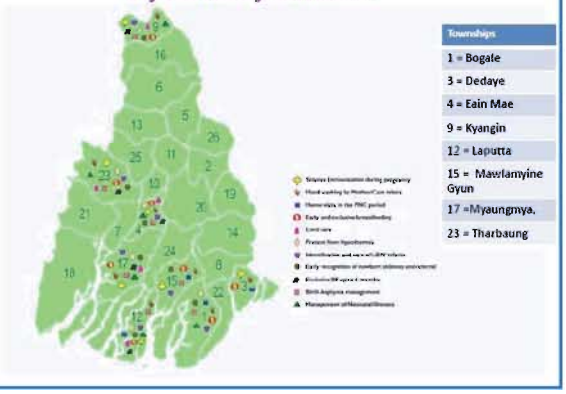


Implementation by partners



Where?

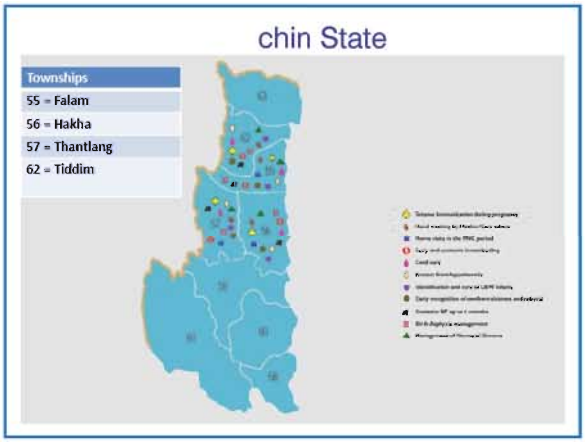
Ayearwady Division



Bago East Division

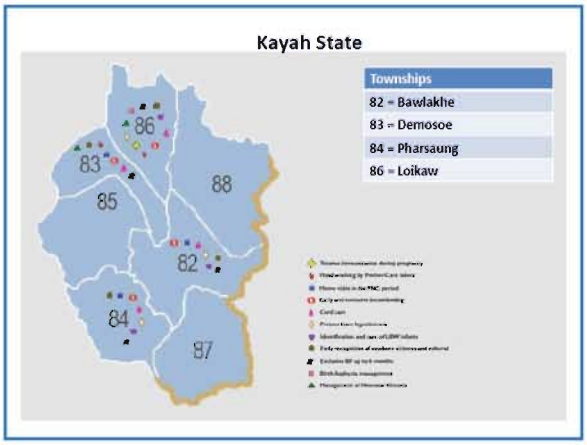
Bago West Division

chin State

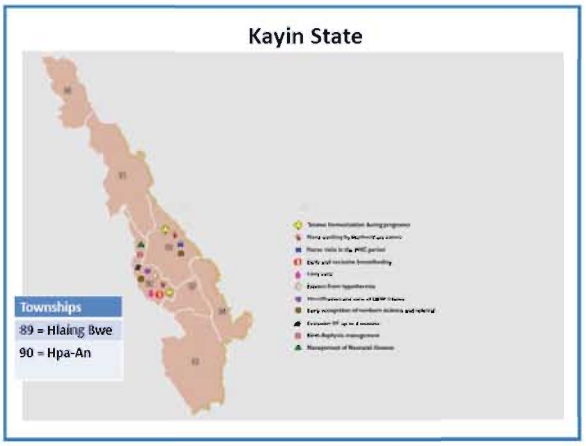


Kachin state

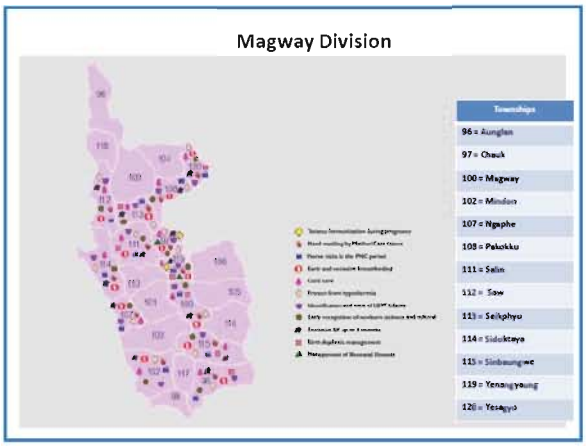
Kayah State



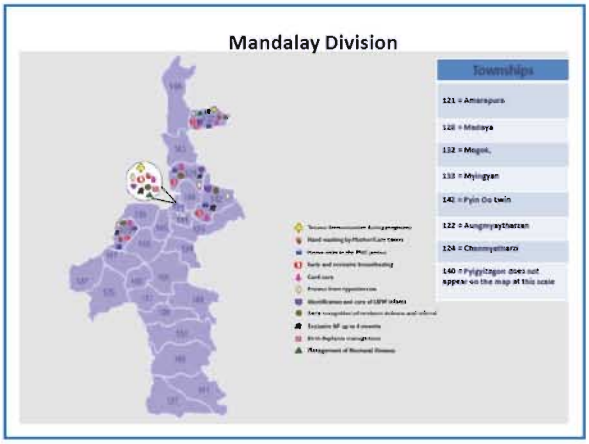
Kayin State



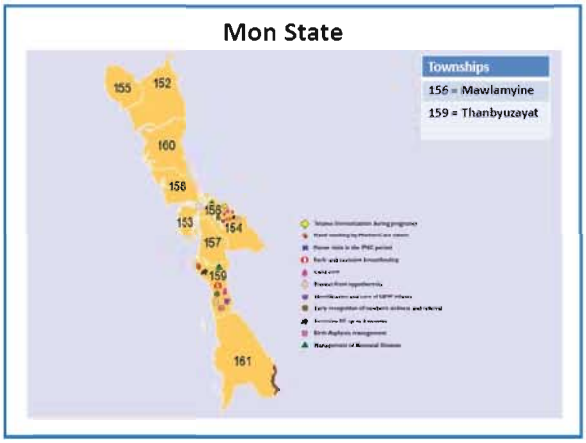
Magway Division



Mandalay Division

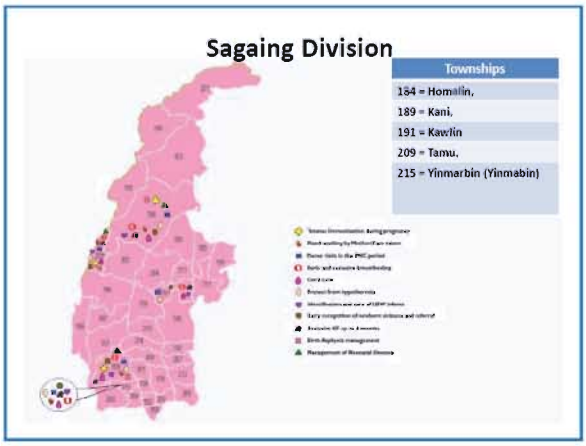


Mon State

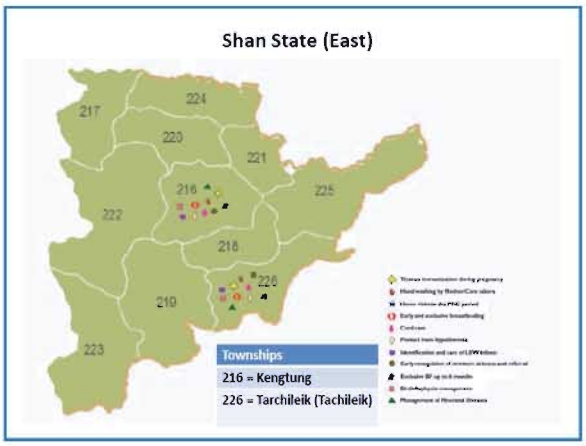


Rakhine State

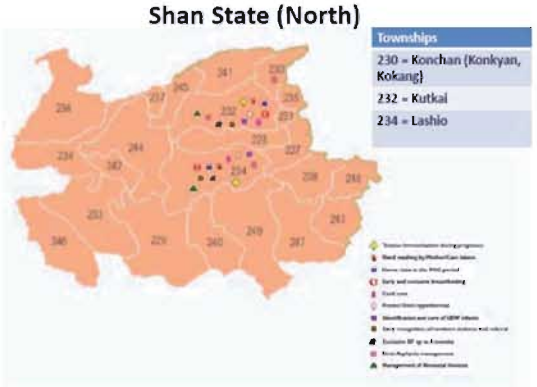
Sagaing Division



Shan State (East)



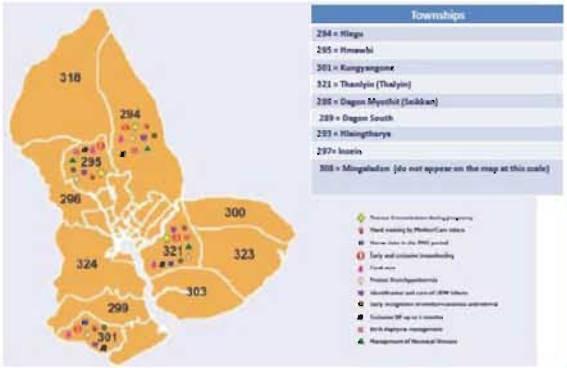
Shan State (North)



Shan State (South)

Tanintharyi Division

Yangon Division



Ongoing &Anticipated activities

TT immunization

Ongoing activities		Anticipated Activities (2014 onwards)
Individual Oriented Clinical Services	Home and Community based services	
Training of health workers at the station, RHC, SRHC, Basic health staff	Training of Village Health Volunteer, AMWs, VHVs and Mother Groups	Support Immunization days at the township level
Transportation, logistic & some medical supplies during monthly outreach activity of BHS	Awareness raising Activities	Continue Awareness raising/ health education sessions Activities
Support immunization days	Outreach activities	Train new ANMs to support with Immunization activities.
		Outreach activities to support TT immunization

Handwashing

Ongoing activities		Anticipated Activities (2014 onwards)
Individual Oriented Clinical Services	Home and Community based services	
Training at township hospitals, station health units	Awareness raising by basic health staff	Awareness raising by basic health staff
Health education sessions	Hand Washing Campaigns and provision of hygiene kits	Hand Washing Campaigns and provision of hygiene kits
Provision of supplies	Health education by volunteers	Trainings and health education sessions

Home visits in the postnatal period

Ongoing activities		Anticipated Activities (2014 onwards)
Individual Oriented Clinical Services	Home and Community based services	
PCPNC Trainings for township hospital and MCH staff, station hospital staff, SMO	BHS conduct home visit during PNC period	BHS and volunteers conduct home visit during PNC period to complete PNC (4 times) after delivery
Support BHS for PNC activities and support EmONC	Awareness raising activities at community level	Provide referral cost for Emergency obstetric Care
Trainings on primary health care covering PNC home visits	Provide referral cost for Emergency obstetric Care	Refresher trainings for AMWs, volunteers, mothers groups
Provision of EmoNC materials and supplies	AMW/ volunteer training to provide PNC at home	
Financial support for Referral on EmOC and ECC, Essential new born care training in Laputta	Mobile medical teams provide postnatal home visits	
	Training of MCH volunteers, mother support groups	
	Provision of PNC home visits and financial support for referral	

Breastfeeding

Ongoing activities		Anticipated Activities (2014 onwards)
Individual Oriented Clinical Services	Home and Community based services	
Awareness creation activities at township, station, EHC, SRHC	Awareness creation activities by BHS and Volunteers	Awareness creation activities
Trainings and CME on Breastfeeding to HF staff at various levels.	Training of AMWs, VHVs and Mother Groups to provide health education for Exclusive Breast Feeding	Training of AMWs, VHVs and Mother Groups to provide health education for Exclusive Breast Feeding
	IYCF trainings and refreshers	

Cord care

Ongoing activities		Anticipated Activities (2014 onwards)
Individual Oriented Clinical Services	Home and Community based services	
Training on PHC, PCPNC, ENC to health workers from township, station, RHC and SRHC including BHS and MW	Training of Volunteers, MCH volunteers, AMWs, VHV, mothers group on cord care to provide health education in communities.	Health education sessions at the community level including on cord care
	CDKs distribution to provided to AMWs, TBA, MSGs and pregnant mothers	Trainings on PNC, ENC including cord care to AMWs, VHVs, MCH volunteers, mothers groups etc.
	Health education sessions on cord care	

Protect from Hypothermia

Ongoing activities		Anticipated Activities (2014 onwards)
Individual Oriented Clinical Services	Home and Community based services	
Included as a part of numerous ongoing trainings of health workers at various levels.	Training of volunteers, AMWs, MCH volunteers, VHVs, MGs on Hypothermia management	Trainings on hypothermia management to health workers and volunteers.
	Home based newborn care training to volunteers includes hypothermia management	Home based PNC visits by health workers including Hypothermia management
	Health education	

Identification and care of LBW infants

Ongoing activities		Anticipated Activities (2014 onwards)
Individual Oriented Clinical Services	Home and Community based services	
Included as a part of numerous ongoing trainings of health workers at various levels.	Training to BHS for the case of management of Acute malnutrition, Newborn care and training to VHW.	Training to BHS for the case of management of Acute malnutrition, Newborn care and Multiplier training to VHW at monthly RHC meeting
Awareness raising activities, screening for under-nourished children with cooking demonstrations, established Hospital Nutrition Units.	Referral support for emergencies, Provide seed money for income generation activities including referral support.	Volunteers will provide home based newborn care visits which includes LBW identification and care
On the job trainings to health workers	Health education and Community nutrition sessions	Referral support for emergencies
Provide referral cost for emergency child health care.	As a part of home based PNC - MCH Volunteers, AMWs, MWs are trained to weigh newborns, identify LBW infants for appropriate referrals.	Health education sessions
	Do's & Don't orientation sessions for TBA	

Early recognition of newborn sickness and referral

Ongoing activities		Anticipated Activities (2014 onwards)
Individual Oriented Clinical Services	**Home and Community based services**	
Financial support for referral	Identification of danger signs and referral to HF by volunteers, MWs, MWs, VHVs, mothers groups	Identification of danger signs and referral to HF by volunteers, MWs, MWs, VHVs, mothers groups
Trainings on danger signs identification, management and referral a part of various trainings	Do's & Don't orientation sessions for TBA"	Support referral fund, seed money for income generation for early referral, and incentive and checklists for PNC visits by MSGs
Provide equipment & supplies for ENC	Referral support for emergencies, Provide seed money for income generation activities including referral support.	Demand generation at the community level.
CME sessions at health facilities.		Home based PNC visits by health workers including Hypothermia management

Birth Asphyxia management

Ongoing activities		Anticipated Activities (2014 onwards)
Individual Oriented Clinical Services	**Home and Community based services**	
In service trainings on PCPNC, ENC Training, BA management training to health workers.	Provided training to BHS, AMWs, volunteers, mothers groups.	Continue technical trainings, refreshers and on the job trainings for BA management
Provide equipment & supplies for BA (Bag and Mask, tube & mask, DeLee Suction)	Do and Don't training for TBAs.	
CME sessions at health facilities.	Provide seed money for income generation activities including referral support.	
Support emergency referral of asphyxiated neonates.		

Management of Neonatal illnesses

Ongoing activities		Anticipated Activities (2014 onwards)
Individual Oriented Clinical Services	**Home and Community based services**	
In service trainings to health workers at township, station, RHC and SRHC on ENC, IMCI, PNC	Provided ENC training to BHS, AMWs, volunteers, mothers groups.	Continue technical trainings, refreshers and on the job trainings for BA management
Provide equipment & supplies for managing neonatal illnesses.	Do and Don't training for TBAs.	Provide referral support
CME sessions at health facilities.	Provide seed money for income generation activities including referral support.	Support drugs, equipment and supplies.
Support emergency referral	Health education sessions on danger signs by volunteers and CHWs.	Health education sessions

Research planned

- Baseline and End line Rapid Knowledge Practice and Coverage surveys using LAQS methodology covering newborn care, breastfeeding and hygiene.
- Pre and post test assessments of health workers, CHWs, VHVs after training
- Project monitoring activities.

Limitations

- Response rates not very high- Request to all partners to send further information.
- The template was not properly followed hence limited data.
- This is an ongoing activity and work in progress- does not reflect full status yet.

Thank You

Annex 4: List of documents reviewed

1. Assessment of emergency obstetric care in Myanmar, 2010 (Women and Child Health Development Section, Ministry of Health and UNICEF)
2. Nationwide cause specific maternal mortality survey (2004-2005), (Ministry of Health and UNICEF)
3. Five year strategic plan for Child Health Development in Myanmar (2010 2014), WCHD (Ministry of Health)
4. Situation Analysis of Children in Myanmar, July 2012 (Ministry of National Planning and Economic Development and UNICEF)
5. Guideline for township health system assessment, September 2011, Ministry of Health, GAVI Alliance and WHO)
6. Standard Operation Procedure on Drug and Supply management (National Malaria Control program), 2011, Ministry of Health and UNICEF
7. Perspective of Midwives in the provision of special infectious disease control activities and medical services in Phyu and Daik U township, Bago Division 2003).
8. Documentation the lesson learnt from Joint Initiative on Maternal Neonatal & Child Health (JMNCH), Ayewarddy region), Burnet Institute, Myanmar, March 2013
9. Short program review on Child Health Development, 2009 (Ministry of Health, UNICEF and WHO)
10. Five year strategic plan for reproductive health (2009-2013), Ministry of Health
11. Multiple indicator cluster survey (2009-2010), Myanmar, Ministry of National Planning and Economic Department, Ministry of Health and UNICEF
12. Research study on the Determinant of Infant and Child Morbidity and Mortality in Myanmar, April 2005, Department of population, and UNFPA.
13. Annual public health statistics report, 2011, Department of Health Planning and Department of Health, Ministry of Health
14. Maternal mortality in 2005, estimates developed by WHO, UNICEF, UNFPA and The World Bank
15. Overall and cause specific under five mortality survey 2002-2003, WCHD (Ministry of Health), and UNICEF
16. Country report on 2007 fertility and reproductive survey, Department of population and UNFPA
17. Facility based integrated management of neonatal and childhood illness (F-IMNCI), chart booklet, facilitator guide, participants manual, Australia AID, MOH and WHO
18. Facility based integrated management of neonatal and childhood illness (F-IMNCI), , Australia AID, MOH and WHO

Annex 5: Interview Guides for Key Informants

Mothers and Caretakers:

Introductory Questions:

1. Introduction to the objective of the visit
2. A brief introduction on the purpose of the interview
3. Ask them to describe who they are and their role.
4. Introduce them to the topic of interest which is newborn health and discuss the situation of newborns in Myanmar: Each year, around 56,000 children under five die in Myanmar – 43,000 of them younger than 1 month. Despite improvements, the country's under-5 and infant mortality rates are the second highest among ASEAN member countries, and many of these deaths are preventable. The principal causes of neonatal mortality (within 28 days of age) are prematurity, birth asphyxia and sepsis, including pneumonia. Child mortality rates are higher in the central plains, in rural areas, among families without formal education and among children from the poorest families.
5. Explain the purpose of the visit (NBH assessment, Bottleneck analysis, review of UNICEF supported CBNBC programmatic responses to make policy and programmatic recommendations to the Department of Health, Ministry of Health.

Specific Questions:

1. Who provides you with information on newborn health?
2. What is the content of the messages that you are currently receiving on newborn health?
3. Where do caregivers/ Mothers seek care for common newborn illnesses?
4. How do you recognise danger signs?
5. When do you seek care for neonatal illnesses?
6. Where (identify private or public facilities) do you seek care for common newborn health conditions in your village? Why?
7. If no mention of public facility, probe for reasons?
8. What are the main barriers for maternal and newborn care services that families in your community have to face?
9. What existing cultural practices limit families to seek timely care for Neonatal illness?
10. What have you learnt from the Volunteers/AMW/ CHWs on Safe Delivery and newborn care?
11. Are you satisfied with the services provided by the Health Volunteers for CBNBC?
12. Do you follow the advice provided by the Volunteers on health?
13. How much do families in your village/ community have to spend on treatment if a newborn is seriously ill?

14. Can you describe the visit by the CBNBC Volunteer, AMW, CHW, duration and process of the visit and the topics of counselling you receive?
15. Do you know if there is a CBNBC volunteer in your village?
16. Do you know if there is a midwife working in a public sector health centre in your village?
17. Can you reach her for any urgent needs?
18. Can you easily obtain care at the health facility for serious illness once referred by the Volunteer/ health worker?
19. Once the volunteer identifies danger signs in your newborn and the midwife provides initial treatment, where do you go to seek further treatment?
20. How many times did you visit a health facility during the antenatal period, delivery and after delivery?
21. For mothers who delivered at home: Who was the birth attendant? Why did you deliver at home? Who provide immediate newborn care?
22. What are five essential newborn care messages?
23. Are you satisfied with the quality of MNH services that you currently receive? Why?
24. What according to you would be the most suitable approach to provide community based services for newborns in your community?
25. Are you a part of any Self Help Groups/, Mothers Groups? If yes, probe about what's the best thing about their involvement in the group?

Service Providers: Basic Health Staff (HA, LHV and Midwife), Township Medical Officer, Health Volunteers for CBNBC

Introductory Questions:

1. Introduction to the objective of the visit?
2. A brief introduction on the purpose of the interview?
3. Ask them to describe who they are and their role?
4. Introduce them to the topic of interest which is newborn health and discuss the situation of newborns in Myanmar: Each year, around 56,000 children under five die in Myanmar – 43,000 of them younger than 1 month. Despite improvements, the country's under-5 and infant mortality rates are the second highest among ASEAN member countries, and many of these deaths are preventable. The principal causes of neonatal mortality (within 28 days of age) are prematurity, birth asphyxia and sepsis, including pneumonia. Child mortality rates are higher in the central plains, in rural areas, among families without formal education and among children from the poorest families.
5. Explain the purpose of the visit (NBH assessment, Bottleneck analysis, review of UNICEF supported programmatic responses to make policy and programmatic recommendations to the Department of Health, Ministry of Health.

Introductory Questions:

1. As a part of your current work, do you provide any messages on NBH? Is yes what are they?
2. Have you received training on management of newborn illness?(Probe: recognition of danger signs, initiation of treatment and referral for Injectable/s)
3. Do you feel that you need to update your knowledge and skills on this area?
4. Do you think a programme addressing serious neonatal illnesses is required in your area?
5. Who do you think should be involved in this effort at the community level?
6. What will enable families to seek timely care at public facilities for neonatal illnesses rather than at private facilities?
7. How do you think treatment can be started promptly after CB-NBC volunteer/ midwife/ you recognize danger signs?
8. Midwife: Do you think Health Volunteers for CBNBC are competent in identification of danger signs, *treatment initiation* and expediting referral for treatment of newborn illnesses?
9. Midwife: What supportive mechanisms should be kept in place so that the Health Volunteers for CBNBC receive adequate support?
10. What proportions of sick kids receive treatment at private facilities?
11. What are some of the barriers to care seeking for neonatal health conditions?
12. Have you heard about any neonatal deaths in your catchment area in the past three years?
13. What are the most common conditions affecting neonates in your community?
14. If we introduced a programme which taught Health Volunteers for CBNBC about recognition of danger signs, do you think it is possible for the AMW,MW to initiate treatment with oral antibiotics and refer to you or to the higher level health facility for injectable?
15. For Midwife: What do you think about AMW providing Injectables to newborns?
16. For Auxiliary Midwife: If you were to identify neonatal illness in the community, would it be possible to establish contact with the Midwife (Fixed, Outreach) for provision of Injectables?
17. For Health Volunteers for CBNBC: Can you make follow up visits to the sick newborn to ensure completion of all doses of antibiotics?
18. For Health Volunteers for CBNBC: Do you think it is feasible for AMW/MWs to provide Injectables at the community level for seven days for each diagnosed case?
19. For AMW and midwives: Have you received training on provision of Injectables to newborns?
20. For Midwife: Do you think it is feasible for you to provide Injectable at the community level for seven days to each diagnosed case?

21. If families cannot come to the health facility and you are informed of their inability to come to the HF, what could be possible methods to ensure that they receive the care that they need?
22. In your catchment area, do you think any special approaches are needed to reach the hard to reach and if yes, what are they?
23. Do you record or report on NB illness? Check the CBNBC registers, Health facility registers?
24. In your opinion, do families comply with the referral recommendations?
25. What supportive supervision mechanism/s are in place to support you to apply your acquired skills and knowledge to improve maternal and neonatal care in your day to day practices?
26. How can we ensure better feedback on performance of the CBNBC programme and improve use of routinely collected data?
27. For Health Volunteers for CBNBC: What is your motivation to be a part of this work in communities?
28. Do you teach mothers about KMC?
29. What do you do for preterm births?
30. What do you do for LBW/VLBW babies?
31. What do you do for asphyxiated newborns?

Health Facility: Rural Health Centre, Sub health centre

Introductory Questions:

1. Introduction to the objective of the visit
2. A brief introduction on the purpose of the interview
3. Ask them to describe who they are and their role.
4. Introduce them to the topic of interest which is newborn health and discuss the situation of newborns in Myanmar: Each year, around 56,000 children under five die in Myanmar – 43,000 of them younger than 1 month. Despite improvements, the country's under-5 and infant mortality rates are the second highest among ASEAN member countries, and many of these deaths are preventable. The principal causes of neonatal mortality (within 28 days of age) are prematurity, birth asphyxia and sepsis, including pneumonia. Child mortality rates are higher in the central plains, in rural areas, among families without formal education and among children from the poorest families.
5. Explain the purpose of the visit (NBH assessment, Bottleneck analysis, review of UNICEF supported programmatic responses to make policy and programmatic recommendations to the Department of Health, Ministry of Health.

Specific Questions:

1. Who is the healthcare provider dealing with neonatal illnesses?
2. What diagnostic facilities available?
3. How do they handle Neonatal Sepsis/sick newborn?
4. Any triage mechanism in place?
5. What is the recording and reporting system for OPD?
6. What is the reporting mechanism for IPD admissions?
7. Look at the service registers to see any record of neonatal conditions?
8. Do you admit serious newborns with sepsis?
9. Do you follow any standards/ criteria for admission or referral to higher levels for neonatal illnesses? If yes, what are they and if no, do you think it is possible to introduce standards based protocols in your facility?
10. I would like to know if the following items are available in the OPD/ delivery area
    a. Treatment protocol for PSBI?
    b. Oral Cotrimoxazole/ Amoxicillin
    c. Injectable Gentamicin
    d. ARI timer
    e. Bag and Mask
    f. Weighing Scale
    g. Functional tap with running water
    h. Soap for hand washing
    i. HLD gloves
    j. Separate towel for drying a newborn
    k. Baby Friendly Hospital Initiative/ Family Friendly Hospitals?
11. Are the six cleans practiced during delivery
12. Is there a quality improvement team within the facility?
13. Who could be a focal person for neonatal illnesses?
14. To the Officer In-Charge: How can we enable you to provide treatment for serious neonatal illnesses?
15. How can we ensure that neonates in your health facility receive priority?
16. Are there are Audits or MPDR mechanisms in place?
17. How do you utilise date to make decisions at your health facility?
18. What are the supervision mechanisms that exist to support your work?

Township, District, National level: Township Medical Officer-Township Health Department, Central level MOH: RCH deputy director and WCHD Deputy Director, Senior paediatricians, neonatologists and OBGYN.

Introductory Questions:

1. Introduction to the objective of the visit
2. A brief introduction on the purpose of the interview
3. Ask them to describe who they are and their role.
4. Introduce them to the topic of interest which is newborn health and discuss the situation of newborns in Myanmar: Each year, around 56,000 children under five die in Myanmar – 43,000 of them younger than 1 month. Despite improvements, the country's under-5 and infant mortality rates are the second highest among ASEAN member countries, and many of these deaths are preventable. The principal causes of neonatal mortality (within 28 days of age) are prematurity, birth asphyxia and sepsis, including pneumonia. Child mortality rates are higher in the central plains, in rural areas, among families without formal education and among children from the poorest families.
5. Explain the purpose of the visit (NBH assessment, Bottleneck analysis, review of UNICEF supported programmatic responses to make policy and programmatic recommendations to the the Department of Health, Ministry of Health.

Specific Questions:

1. Who is the healthcare provider dealing with neonatal illnesses?
2. What diagnostic facilities are available?
3. How do you manage sick newborns that come to your health facility?
4. Are there any triage mechanisms in place?
5. What is the recording and reporting system for OPD?
6. What is the reporting mechanism for IPD admissions?
7. Look at the service registers to see any record of neonatal conditions?
8. Do you admit serious newborns with PSBI?
9. Do you follow any standards/ criteria for admission or referral to higher levels for neonatal illnesses? If yes, what are they and if no, do you think it is possible to introduce standards based protocols in your facility?
10. I would like to know if the following items are available in the OPD/ delivery area
    a. Treatment protocol for PSBI?
    b. Oral Cotrimoxazole/ Amoxicillin
    c. Injectable Gentamicin
    d. ARI timer
    e. Bag and Mask

f. Weighing Scale
g. Functional tap with running water
h. Soap for hand washing
i. HLD gloves
j. Separate towel for drying a newborn
k. Newborn care corner
l. Others… (specify what)

11. What is the status of Baby Friendly Hospital Initiative/ Family Friendly Hospitals?
12. Are the six cleans practiced during delivery?
13. Is there a quality improvement team within the facility?
14. Who could be a focal person for neonatal illnesses in your township or district?
15. How can we enable you to provide treatment for neonatal illnesses?
16. How can we ensure that neonates in your health facility receive priority?
17. Are there are Audits or MPDR mechanisms in place?
18. What is the current supervision mechanism that you promote and what are some of the challenges? How can we further improve?
19. What is the existing recording, reporting and feedback mechanism for newborn health in the country? What can we do to strengthen and institutionalise the M& E systems?
20. What are some of the barriers to care seeking for neonatal illnesses in your areas? (Both demand and supply side)
21. Are there any Quality Improvement teams at health facilities?
22. How do you work to improve Quality of MNH services in your township?
23. What programmes do you think we could start in your area of improve MNH further and reduce neonatal deaths?
24. What support do you think will be required in your township if we were to introduce some innovative programmes to reduce newborn deaths?

Private Sector: Doctors/ Hospitals, private practitioners, Paediatricians, Neonatologists and Obstetricians.

Introductory Questions:

1. Introduction to the objective of the visit
2. A brief introduction on the purpose of the interview
3. Ask them to describe who they are and their role.
4. Introduce them to the topic of interest which is newborn health and discuss the situation of newborns in Myanmar: Each year, around 56,000 children under five die in Myanmar – 43,000 of them younger than 1 month. Despite improvements, the country's under-5 and infant mortality rates are the second highest among ASEAN member countries, and many of these deaths are preventable. The principal causes of neonatal mortality (within 28 days of age) are prematurity, birth asphyxia and sepsis, including pneumonia. Child mortality rates are higher in the

central plains, in rural areas, among families without formal education and among children from the poorest families.

5. Explain the purpose of the visit (NBH assessment, Bottleneck analysis, review of UNICEF supported programmatic responses to make policy and programmatic recommendations to the the Department of Health, Ministry of Health.

Specific Questions:

1. Do you provide any treatment for neonatal illnesses?
2. What diagnostic facilities are available?
3. Are there any triage mechanisms in place?
4. What is the treatment protocol that you follow for serious neonatal illnesses- probe for neonatal sepsis?
5. Do you teach mothers about KMC?
6. What do you do for preterm births?
7. What do you do for LBW/VLBW babies?
8. What do you do for asphyxiated newborns?
9. For all identified neonatal sepsis cases, do mothers/caregivers follow the prescribed treatment regimen? If not, probe why?
10. Do you admit serious newborns with sepsis in your health facility?
11. Do you follow any standards/ criteria for admission or referral to higher levels for neonatal illnesses? If yes, what are they and if no, do you think it is possible to introduce standards based protocols in your facility?
12. Are you aware of the Government protocols and standards for treatment of neonatal illnesses?
13. How do you deal with any poor families with sick neonates who come to your facility?
14. Are you aware of any government/ partner efforts to involve the private sector in MNCH?
15. If yes, what are the good things about that approach?
16. I would like to know if the following items are available in the OPD/ delivery area
    a. Treatment protocol for PSBI?
    b. Oral Cotrimoxazole/ Amoxicillin
    c. Injectable Gentamicin
    d. ARI timer
    e. Bag and Mask
    f. Weighing Scale
    g. Functional tap with running water
    h. Soap for hand washing
    i. HLD gloves
    j. Separate towel for drying a newborn
    k. Baby Friendly Hospital Initiative/ Family Friendly Hospitals?
    l. Radiant Warmer

Annex 6: List of people consulted during the review

Meetings held by International UNICEF MNCH Consultant: Dr. Gaurav Sharma			
Meeting at Naypyi Taw			
Date	**Name**	**Designation**	**Organization**
5/9/2013	Dr. Theingi Myint	Deputy Director	MCH (DOH)
	Daw Thazin Nwe	Secretary	MMCWA
	Dr. Thet Thet Mu	Director	Department of Health Planning
6/9/2013	Dr. Kyaw Kan Kaung	Deputy Director	EPI (DOH)
	Dr. Htar Htar Lin	Assistant Director	EPI (DOH)
	Dr. Hla Myat Thway Enda	Deputy Director	Training (DOH)
	Dr. Thuzar Chit Tin	Deputy Director	BHS (DOH)

Bilateral Meetings with partners and stakeholders			
13/9/2013	Dr. Tin Mg Chit		UNFPA
	Dr. Ni Ni Kahing	National program officer, HIV	
	Dr. Win Aung	National program officer, RH/ARH training	
	Professor Soe Myint,	Consultant, Deputy Director General (Retired), Department of Health planning, MOH	
	Dr. Yan Naing Linn	National program officer, young people	
16/9/2013	Dr. Hlaing Min Swe	Technical Advisor	MSI
	Dr. Aye Thida		IOM
	Mr Greg Irving	Programme Manager-Migration Health	
	Dr. Kyaw Kyaw Cho	Senior Program Associate	
	Dr. Thiha Htun		
17/9/2013	Ms. Krittayawan Tina Boonto	Investment and Efficiency Adviser	UNAIDS
	Mrs. Denise Byrd	Country Representative	Jhpiego
	Dr. Myint Oo	Senior country program coordinator	RI
	Daw Doira	Program Manager	
18/9/2013	Mr. Suleman	C4D Specialist	UNICEF
	Dr. Aye Thein	Project Coordinator	AFXB
	Dr. Aye Mya San	Medical Officer	
	Mr. Richard Harrison	Country Director	PACT Myanmar
	Dr. Wai Wai Lwin	Technical quality advisor, Health	
	Dr. Thida Lin		
	Daw Ei Ei Han	Program Manager, Sustainable health improvement & empowerment program	
19/9/2013	Dr. Kyaw Myint Naing	President	MMA
	Dr. Soe Aung		
	Dr. Thet Lwin		
	Dr. Pyae Pyae Phyo	Health service manager, operation	PSI
	Dr. Ohnmar Aung,	Health Specialist (HIV)	UNICEF
	Dr. Kyaw Nyunt Sein	Senior National Advisor	UNOPS
	Dr. Yin Yin Htun Ngwe	Public Health Officer	
	Dr. Myint Thu Lwin	Public Health Officer	
20/9/2013	Dr. Aye Sanda Aung	Senior Program Officer, Health	AusAID
	Ms. Kaori Nakatani	Project Formulation Adviser	JICCA
	Dr. Thet Aung	Health Department Manager	World Vision
	Mr. William K. Slater	Director, Office of Health	USAID
	Ms. Thu Van T. Dinh	Health Advisor	

Field visit to Kyaukpadaung			
Date	**Place**	**Name**	**Position**
30/9/2013	TMO office, Kyaukpadaung	Dr. Aung Kyaw Moe	Township medical officer
		U Mg Mg Tar	Township Health Officer
		Daw Nu Nu Aye	Township Health Nurse
		U Zarli Aung	Health Assistant 1
		U Aung Moe	Health Assistatn
		Daw San San Htay	Lady Health Visitor (MCH)
		Daw Sandar Win	Lady Health Visitor (Thapyai Kaing RHC)
	Inn Taw village	Daw Myint Myint Mu	Volunteer
	Kyauk Sit Kan village	Daw Win Maw San	Volunteer
31/9/2013	Hna-Kyat-Khwe village	Daw Khin Hla Ye	Midwife
		Daw Mya Kyauk Khaing	Midwife
	Latpanpin Sub center	Daw Thida Aye	Midwife
	Poppa RHC	U Myo Win	HA
		Daw Moh Moh Lwin	LHV
		Daw Cho Zar Win	Midwife
	Myauk Taw village	Daw Kyoe Kyar	volunteer
		Daw Khin San Moe	mother
		Daw Wai Wai Myint	mother
	Sin Sint Village	Daw Win Tin	volunteer
2/10/2013	Meeting at TMO office	U Mg Mg Tar	THA
		Daw Nu Nu Aye	THN
		U Zarli Aung	HA1

Field visit to Thaton			
Date	**Place**	**Name**	**Position**
8/9/2013	TMO office	Dr. Aye Aye Thant	Senior Pediatrician
	Training Team	Dr. Aung Thu Zin	Pediatrician
		U Soe Aung	Township Health Assistant
		U Aung Win Shwe	Health Assistatnt (Kyar Pan RHC)
9/9/2013	Mayangone village	Daw Kyu Kyu Win	volunteer
		Daw May Zar Aung	MW
		U Wai Lwin Oo	HA
		U Wai Yan Oo	PHS2
		1. U Myat Thein (Chair) 2. U Sein (Secretary) 3. U Tin Myat (Finance) 4. U Aung Kyi 5. U Aye Than 6. U Tin Myint 7. U Ngwe Thein 8. U Kyaw Win 9. Ko Myint Htwe	village support committee
	Mayangone SC	Daw May Zar Aung	MW
		U Wai Lwin Oo	HA
		U Wai Yan Oo	PHS2
	Seik Kyun village	Daw Win Kyi	CBNBC volunteer
		Daw Tin Tin oo	MW
		1. U Tun Aung Kyaw (Chair) 2. U Sein Tun 3. U Taung Sein 4. U Aye Thein 5. U Myat Soe 6. U Zaw Aung 7. U Sein Myint 8. U Min Min	village support committee
	Seil Kyun Sub-center	Daw Tin Tin Oo	MW
	Kadaik Gyi RHC	U Wai Lwin Oo	HA
		Daw Myint Than	LHV
		Daw Khin Win Yi	MW
	Anan Gone village	Chaw Nwet Htoo	CBNBC volunteer
		Daw Cho Cho Mi	MW (Kyauk Kaw SC)
	Naung Poet village	Naw Phaw Phaw	CBNBC volunteer
		Kyaw Swa Myint	HA (Naung Kalar RHC)
		1. U Phoe Myint (Chair) 2. U Myint Thein (Leader) 3. Saw Eh Moe 4. U Tun Myint 5. U Aung Gyi	village support committee
	Naung Kalar RHC	U Kyaw Swa Myint	HA
		Daw Phyu Phyu Lin	LHV
		Daw Khin Than Mon	MW

10/9/2013	Kyar Pan RHC	U Aung Win Shwe	HA
		Daw Theingi Shwe	MW
		Daw Khin Soe Hlaing	LHV
	Myat San village	Daw Shwe Win	CBNBC volunteer
	Inn Gwe village	Ma Htay	CBNBC volunteer
		1. U Mg Htwe (Leader) 2. U Zaw Htoo Hae 3. Daw Malar Oo	village development committee
	Ananpin village	Naw Hlan Theing	CBNBC volunteer
		1. Daw Mya Nan Sein 2. Daw Thazin Oo	Chair of MMCWA
11/9/2013	Done Wone village	Daw Khin Kyu Thin	CBNBC volunteer
		Daw Hla Mya Thwe	MW
		Daw Mi New Daw Sein Htay Daw Htay Yi	MMCWA member
		U Sein Mg	Village elder
		1. Ma Nge (40 year, 21 days child, 4 children) 2. Daw Htay Win (42 year, 3rd week child)	Mother
11/9/2013	Phaw Pha village	Daw Myint Myint Maw (Phaw Pha village)	CBNBC volunteer+AMW
		Ma Khilaw (Ka Moon Chone village)	CBNBC volunteer+AMW
		Daw Aye Aye Mu	AMW
		U Kyaw Hlaing	CHW
		Ma Mae Thae	mother
		Daw Htay Htay Lwin	MW
		U Zay Ya	village leader
11/9/2013	Nga Gyin village	Daw Ei Ei Mon	CBNBC volunteer (IOM malaria volunteer) + AMW
		Daw Thin Thin Khaing (Butar village)	CBNBC Volunteer+CHW
		Daw Tin Tin Nyo	MW (Thein Seik SHU)
		Daw Khin Mar Yi	LHV (Thein Seik SHU)
		Daw Khin Nwe Aye	mothers (25 year, first child 23 days old child)

Annex 7: Some considerations related to newborn Care:

A: Newborn Care related supplies and commodities

Physical Infrastructure
• Electricity or generator • Water supply • Staff quarters • Telephone/radio call/mobile phone • Ambulance
Warm and Clean Room
• Delivery bed(s)
• Clean bed linen • Curtains if more than one bed • Clean surface (for alternative delivery position) • Work surface for resuscitation of newborn near delivery bed(s) • Light source • Heat source • Room thermometer
Hand Washing
• Clean water supply • Soap • Nail brush or stick • Clean towels
Waste
• Puncture resistant container for sharps disposal • Receptacle for soiled linen • Bucket for soiled pads and swabs • Bowl and plastic bag for placenta
Sterilization
• Instrument sterilizer • Jar for forceps
Miscellaneous
• Wall clock • Torch and extra batteries • Refrigerator • Log books • Records • Registers
Equipment
• Blood pressure machine and stethoscope • Foetal stethoscope Thermometer • Self-inflating bag and masks (adult) • Self-inflating bag and masks (newborn sizes 0 and 1) • Mucous extractor with suction tubes • Vacuum extractor • MVA syringe and cannula

Delivery Instruments (Sterile)
• Scissors • Needle holder • Artery forceps or clamp • Dissecting forceps • Sponge forceps • Vaginal speculum
Supplies
• Gloves: - Utility - Sterile or high-level disinfected - Long sterile for manual removal of placenta • Long plastic apron • Waterproof foot wear • Plastic eye shield • Urinary catheters • Syringes and needles
• IV tubing • IV solutions (Ringers lactate, normal saline) • Suture material for repair of tears or episiotomy • Antiseptic solution (iodophors or chlorhexidine) • Spirit (70% alcohol) • Swabs • Bleach (chlorine-based compound) • Clean plastic sheet to place under mother • Sanitary pads • Clean towels/cloths for drying and wrapping the baby • Cord ties/clamp • Impregnated bed nets • Urine dipsticks
Test Kits
• Syphilis (rapid test) • HIV (rapid test) • Haemoglobin

B: Designation of a Newborn Care Corner in a Labour Ward

Labour rooms in every facility at every level are required to have appropriate facility for providing essential care to newborns and for resuscitating those who might require it. Newborn care corner in this document refers to the space within the labour room for providing immediate newborn care to all newborns.

Services at the corner

Newborn care corner provides an acceptable environment for all infants at birth. Services provided in the Newborn care corner include;

- Essential Care at birth.
- Resuscitation.
- Provision of warmth.
- Early initiation of breastfeeding.
- Weighing the neonate.

Configuration of the corner

Clear floor area should be provided for in the room for newborn care corner. It should be within the labour room, 20-30 square feet in size, where a radiant warmer is kept. Resuscitation kit should be placed in the radiant warmer. Availability of oxygen source is desirable but not essential. The area should be away from draughts of air and should have appropriate power connection for plugging in the radiant warmer.

Item No.	Item description	Essential/ desirable	Quantity
1.	Open care system: radiant warmer, fixed height, with trolley, Drawers, O2-bottles	E	1
2.	Resuscitator, hand-operated, neonate, 500ml	E	1
3.	Weighing Scale, spring	E	1
4.	Pump suction, foot operated	D	1
5.	Room Thermometer	E	1
6.	Light examination, mobile, 220-12 V	D	1
7.	I/V Cannula 24 G, 26 G	E	
8.	Extractor, mucus, 20ml, sterile, disposable Dee Lee	E	
9.	Towels for drying and wrapping the baby	E	
10	Sterile equipment for cutting and tying the cord	E	
11	Tube, feeding, CH07, L40cm, sterile, disposable	E	
12	Oxygen cylinder 8 F	D	
13	Sterile Gloves	E	

Human resources

Staffing: One staff midwives and nurses is desirable in addition to the one conducting the delivery for providing appropriate care at birth.

Training: All staff posted at the labour rooms should be trained in providing essential care at birth and basic resuscitation.

All EmONC facilities must have skilled staff and facilities for care at birth to all newborns and to provide resuscitation of those who require it. In addition, CEmONC service should be equipped to provide initial care and stabilisation of sick newborns, and care of most low birth weight newborns that do not require intensive care. Hospitals that conducts more than 3000 deliveries should have a Special Care Newborn Unit that is equipped to provide special care to most sick newborns (except those requiring mechanical ventilation or surgical interventions). There should be agreed procedures for transport of sick newborns Newborn care in EmONC facilities must have continuous availability of qualified medical and nursing staff, and resources to meet the needs of all sick babies.

Technical specification standards for the expected levels of equipment should be established and should be adhered to. Local systems for procurement, maintenance and replacement of equipment will be necessary.

Newborn care should comply fully with:

- Clinical guidelines
- Quality assurance
- Follow up of high survivors
- Monitoring service provision and access
- Training and continuing education

Mothers should be encouraged to be involved in care of their sick newborns at every level

Supply requirements for Community Based Newborn Care program:

1. Clean Home Delivery Kits – with chlorhexidine swab and information leaflet
2. De Lee's suction apparatus, tube & mask, self-inflating bag and mask
3. Colour coded thermometer
4. ARI timers
5. Oral Cotrimoxazole -P
6. Injection Gentamicin at peripheral health facilities
7. Weighing scales (colour coded- Red, Yellow and Green)
8. Counselling Cards and Job aids for ENC, PNC, management of birth asphyxia, epsis, LBW
9. Recording and Reporting forms and registers
10. Training materials including mannequins for training

Annex 8: Suggested Indicators

S.N	Indicator	Numerator	Denominator	Level
1	Percentage of VLBW/LBW babies among all live birth weighed	# of VLBW/LBW babies	Number of live birth weighed within 3 days	Community/ HF
2	Percentage of newborn receiving care on 1-3 days after delivery	# of newborn receiving care on 1-3 days after delivery	# of newborn registered in Volunteer/MW Newborn form	Community/ HF
3	Percentage of newborn receiving care on 4-7 days after delivery	# of newborn receiving care on 4-7 days after delivery	# of newborn registered in Volunteer/MW Newborn form	Community/ HF
4	Number of neonatal deaths			Community/ HF
5	Percentage of newborn with PSBI	# of newborn entered in the Volunteer newborn service form	# of newborn entered into the Newborn Infection Treatment and referral form	Community/ HF
6	Percentage of newborn with PSBI who received Cotrim	# of newborn with PSBI who received Cotrim- P	# of newborn with PSBI	Community/ HF
7	Percentage of newborn with PSBI who completed the full course of Gentamycin	# of newborn with PSBI seen by MW/HF who completed full course of Gentamycin	# of newborn with PSBI seen by MW/HF	Community/ HF
8	Percentage of women whose home birth was attended by skilled Birth Attendant	# of women whose home birth was attended by skilled birth attendant recorded in the AMW newborn service form	# of birth registered in AMW newborn service form	Community/ HF
10	Percentage of mother delivering at home whose newborn cord was cut with Clean new instrument	# of mother who delivered at home whose newborn cord cut with clean new instrument	# of live birth when the AMW/MW were present at birth	Community/ HF
11	Percentage of mother delivering at home who used CDK	# of mother who delivered at home who use CDK	# of live birth when the AMW were present at birth]	Community/ HF
12	Percentage of mother whose newborn was kept skin to skin contact to her immediately after birth	# of mother whose newborn was kept skin to skin contact to her immediately after birth]	# of live birth when the AMW/MW were present at birth	Community/ HF
13	Percentage of mother who breast feed their newborn within 1 hour	# of mother who breast feed their newborn within 1 hour	# of live birth when the AMW/MW were present at birth	Community/ HF

Annex 9: Operational Definitions

Advocacy: Deliberate efforts, based on demonstrated evidence, to directly and indirectly persuade decision-makers, stakeholders and relevant audiences to support and implement actions that contribute to the fulfilment of the rights of children and women, particularly the most vulnerable and excluded.

Auxiliary Midwife (AMW): Voluntary health workers who received six months training on maternal health following standard curriculum to provide health services at the village level. They particularly assist midwife with maternal health care service delivery. They are unpaid staff.

Benchmark: A reference point or standard against which progress or achievements may be compared.

Capacity Building: Capacity building refers to information, skills and motivation for relevant staff and volunteers on programme process, advocacy, social mobilisation and interpersonal communication skills.

Community Health Worker (CHW): Voluntary health workers who received one-month training on standard curriculum for providing Primary Health Care especially for preventive and promotive services to the community in outreach villages.

Community Case Management (CCM): *One or more villages* or communities with difficult access to a health facility receive health care provided by volunteers who is trained and supervised by health care providers to handle common childhood illnesses among under-five children (2-59 months).

Effectiveness: The extent to which objectives or planned outputs have been achieved.

Efficiency: The extent to which resources have been optimally used to achieve a goal or objective. Good efficiency aims maximum use of resources with minimum cost, time and effort.

Impact: The ultimate planned and unplanned consequences of a program; an expression of the changes actually produced as a result of the program, typically several years after the program has stabilized or been completed.

Lesson Learned: "What works" A general hypothesis based on the findings of one or more evaluations, but which is presumed to relate to a general principle that may apply more generally.

Midwives (MW): Midwife is a paid government staff that receives 24 months training and provides a range of services including care during childbirth.

Monitoring: An on-going process to verify systematically that planned activities or processes take place as expected or that progress is being made in achieving planned outputs

C4D Communication for Development: A systematic, planned, evidence based strategic process that promotes positive and measurable behaviour and social change; is intrinsically linked to programme sectors; uses consultation with and participation of children, families, communities and networks; privileges local contexts; and relies on a mix of communication tools, channels and approaches.

10 References

[1] UN Thematic Analysis March 2011 (Statistical Yearbook 2009, CSO)

[2] UN country profile Myanmar

[3] UN Thematic Analysis March 2011 (Statistical Yearbook 2009, CSO)

[4] UNDP, 2011. Integrated Household Living Conditions Assessment

[5] WHO: Global Health Observatory, Official Development Assistance (ODA) recipient country profiles, 2000–2010. Available at: http://www.who.int/gho/governance_aid_effectiveness/countries/en

[6] ibid

[7] ibid

[8] World Bank: Myanmar - Interim strategy note for the period FY13-14. Washington, D.C: World Bank; 2012

[9] MOH: Health in Myanmar 2012. Union of Republic of Myanmar: Ministry of Health; 2012

[10] ibid

[11] Description of Action Multi Donor 3MDG Fund 2012-2016. Available at: http://www.3dfund.org/images/stories/News-events/3MDG/FINAL_DRAFT_Description_of_Action_3MDG_Fund.pdf

[12] Description of Action Multi Donor 3MDG Fund 2012-2016. Available at: http://www.3dfund.org/images/stories/News-events/3MDG/FINAL_DRAFT_Description_of_Action_3MDG_Fund.pdf

[13] UN: Thematic Analysis 2011: Achieving the Millennium Development Goals in Myanmar. The United Nations Country Team, Myanmar; 2011. Available at: http://www.undp.org/content/dam/undp/library/MDG/english/MDGCountryReports/Myanmar/Thematic-Analysis-2011-for-Myanmar.pdf

[14] United Nations 2010, Global Strategy for Women's and Children' s Health

[15] UN Inter-agency Group for Child Mortality Estimation, Levels and Trends in Child Mortality 2011, New York, 2011.

[16] UN Maternal Mortality Estimation Inter-Agency Group (MMEIG), 2012.

[17] World Health Organization, UNICEF, United Nations Population Fund and The World Bank, Trends in Maternal Mortality: 1990 to 2008, Geneva, 2010.

[18] Nationwide Cause Specific Maternal Mortality Survey 2004-2005. Yangon: MOH, UNICEF, 2006

[19] United Nations, *Millennium Development Goals Report 2006*, New York 2006

[20] World Health Organization, UNICEF, United Nations Population Fund and The World Bank, Trends in Maternal Mortality: 1990 to 2008, Geneva, 2010.

[21] Ministry of Immigration and Population and UNFPA The 2001 Myanmar Fertility and Reproductive Health Survey, Yangon, December 2003

[22] Country Report on 2007 Fertility and Reproductive Health Survey, Department of Population and UNFPA

[23] Ministry of Immigration and Population and UNFPA Detailed Analysis on Fertility and Reproductive Health Survey Yangon, 2001

[24] Country Report on 2007 Fertility and Reproductive Health Survey, Department of Population and UNFPA, 2009

[25] Ministry of National Planning and Economic Development and Ministry of Health, Myanmar, 2011. Myanmar Multiple Indicator Cluster Survey 2009- 2010 Final Report. Nay Pyi Taw, Myanmar. Ministry of National Planning and Economic Development and Ministry of Health, Myanmar

[26] Ministry of National Planning and Economic Development and Ministry of Health, Myanmar, 2011. Myanmar Multiple Indicator Cluster Survey 2009- 2010 Final Report. Nay Pyi Taw, Myanmar. Ministry of National Planning and Economic Development and Ministry of Health, Myanmar

[27] ibid

[28] ibid

[29] ibid

[30] ibid

[31] ibid

[32] Motherhood in Childhood: Facing the challenge of adolescent pregnancy: State of the world Population 2013. United Nations Population Fund, UNFPA. Available at : https://www.unfpa.org/webdav/site/global/shared/swp2013/EN- SWOP2013-final.pdf

[33] Oestergaard, M. Z., Inoue, M., Yoshida, S., Mahanani, W. R., Gore, F. M., Cousens, S., Lawn, J. E., Mathers, C. D., United Nations Inter-Agency Group for Child Mortality, E. and the Child Health Epidemiology Reference, G. (2011) 'Neonatal mortality levels for 193 countries in 2009 with trends since 1990: a systematic analysis of progress, projections, and priorities', PLoS Med, 8(8), e1001080.

[34] Liu, L., Johnson, H. L., Cousens, S., Perin, J., Scott, S., Lawn, J. E., Rudan, I., Campbell, H., Cibulskis, R., Li, M., Mathers, C., Black, R. E., Child Health Epidemiology Reference Group of, W. H. O. and Unicef (2012) 'Global, regional, and national causes of child mortality: an updated systematic analysis for 2010 with time trends since 2000', Lancet, 379(9832), 2151-61.

[35] You, D., Jones, G., Hill, K., Wardlaw, T. and Chopra, M. (2010) 'Levels and trends in child mortality, 1990-2009', Lancet, 376(9745), 931-3.

[36] WHO (2010) WHO Technical consultation on postpartum and postnatal care

[37] WHO (2006) Pregnancy, Childbirth, Postpartum and Newborn Care: A guide for essential practice.

[38] WHO (2009) Integrated Management of Pregnancy and Childbirth: WHO; Recommended Inter Tanahashi T. Bulletin of the World Health Organization, 1978, 56 (2)

[39] http://whqlibdoc.who.int/bulletin/1978/Vol56-No2/bulletin_1978_56(2)_295-303.pdf. Interventions for Improving Maternal and Newborn Health. 2nd edition

[40] WHO. Making pregnancy safer the critical role of the skilled attendant: a joint statement by WHO, ICM and FIGO. Geneva: World Health Organization (WHO). Department of Reproductive Health and Research (RHR), 2004.