

National Strategy for Newborn and Child Survival in Ethiopia

2015/16-2019/20

Maternal and Child Health Directorate Federal
Ministry of Health

JUNE 2015

Addis Ababa, Ethiopia

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ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
CDC	Communicable Disease Control
C-IMCI	Community Integrated Management of Childhood Illnesses
DHS	Demographic and Health Survey
ENA	Essential Nutrition Action
EPI	Expanded Program on Immunization
FDRE	Federal Democratic Republic of Ethiopia
FMoH	Federal Ministry of Health
HAD	Health Development Army
HAPCO	HIV/AIDS Prevention and Control Office
HEP	Health Extension Package
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HSDP	Health Sector Development Program
HSTP	Health Sector Transformation Plan
ICC	Interagency Coordinating Committee
IEC	Information Education Communication
IMNCI	Integrated Management of Newborn and Childhood Illnesses
IMR	Infant Mortality Rate
IYCF	Infant and Young Child Feeding
KMC	Kangaroo Mother Care
JSC	Joint Steering Committee
LB	Live births
MCH	Maternal and Child Health
MDG	Millennium Development Goal
MMR	Maternal Mortality Ratio
NCHS	Newborn and Child Survival Strategy
NIDs	National Immunization Days
NMR	Neonatal Mortality Rate
PMTCT	Prevention of Mother to Child Transmission
PHCU	Primary Health Care Unit
PHC	Primary Health Care
RHBs	Regional Health Bureaus
SDPRP	Sustainable Development & Poverty Reduction Program
SIA	Supplementary Immunization Activities
SNIDs	Sub-National Immunization Days
SNNPR	Southern Nations & Nationalities and Peoples Region
TT	Tetanus Toxoid

FOREWORD

Ethiopia has made impressive progress through achieving many of the national and global health indicators as a result of strong leadership of the Federal Ministry of Health (FMOH), coordination of efforts and intensive investment in the health system by the government, partners and the community at large. The country achieved MDG 4 target in 2012 three years ahead of 2015 by reducing under-five mortality by two thirds from its 1990 level. The National Child Survival Strategy (2005 – 2015) and the Child Survival Partnership were instrumental in guiding the design, implementation, coordination, monitoring and evaluation of high impact newborn and child health interventions in the country.

Whilst celebrating the achievements made through successful implementation of the National Child Survival Strategy (2005 – 2015) FMOH fully recognizes that the current under-five and neonatal mortality rates of 64 and 29 per 1,000 live births, respectively, is unacceptably high. The ministry also acknowledges that neonatal mortality rate is disproportionately high accounting to 44% of under-five deaths. In addition, neonatal and under-five mortality rates vary across income, gender, and geographical areas. Cognizant of this Ethiopia has envisioned to end all preventable newborn and child deaths by 2035. To this effect in 2012 Ethiopia has led the development of the “Promise Renewed Child survival Roadmap” with a commitment to end preventable child death with the goal of dropping under-five mortality rate to less than 20/1,000 live births by 2035.

Effective coverage for life saving high impact newborn and child health interventions has been steadily increasing. However, the access to and utilization of the interventions have not been uniform across all sections of the population and different geographical areas. Building on the success recorded in accelerated expansion of the health services throughout the country through implementation of the four cycles of Health Sector Development Plans (HSDPs) FMOH will work with Regional Health Bureaus (RHBs) and its health development partners to ensure universal coverage of quality high impact newborn and child survival interventions. Addressing inequity and ensuring quality service delivery, prioritized guiding principles in the Health Sector Transformation Plan (HSTP) 2015/16 – 2019/20, will also guide the implementation of this strategy.

The National Newborn and Child Survival Strategy (2015/16-2019/20), which will be part of the HSTP covering same period, aims to reduce under five mortality from 64/1,000 live births (2013 level) to 29/1,000 live births, infant mortality rate from 44/1000 live births to 20/1000 live births and NMR from 28/1,000 live births to 11/1,000 live births. The strategy plans to ensure universal coverage of quality high impact newborn and child health interventions along with meaningful community empowerment to create demand for the services.

The strategy identified and prioritized 39 high impact and cost effective newborn and child survival interventions with key guiding principles for implementation of the strategy including equity and accessibility; community engagement, empowerment and ownership; integration; partnership; efficient use of resources; innovation and use of technology; evidence based decision making; and provision of quality MNCH services. A sustained government and partner’s commitment, the Primary Health Care Unit with its home grown innovative Health Extension Program that utilizes the Health Development Army as platform for social mobilization, and strengthened referral and linkage will continue to be the basis for continued gains in newborn and child health.

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EXECUTIVE SUMMARY

In Ethiopia, under-five mortality rate has declined by two thirds from the 1990 figure of 204/1,000 live births to 68/1,000 live births in 2012, thus meeting the target for Millennium Development Goal 4 (MDG 4) on child survival three years ahead of time. In absolute numbers the under-five deaths in Ethiopia has declined from nearly half a million, 444,000 a year in 1990, to about 196,000 in 2013. However, the mortality reduction was not uniform across the different childhood age groups, geographic and socio-demographic population groups. Disaggregation of the mortality data by age reveals that the decline in neonatal mortality is not as impressive as the infant and child mortality figures. It has fallen only by 42% during the same period; from 54/1000 live births in 1990 to 28/1000 live births in 2013. About 44% of the childhood deaths occur within the first 28 days of life, thus increasingly accounting for a larger proportion of the under five deaths. There is also wide geographic variation in under-five mortality according to the EDHS 2011 ranging from as low as 53/1000 live births in Addis Ababa to as high as 169/1000 live births in Benishangul-Gumuz region. Similarly, significant variation is also observed among different socio-economic groups within the same geographic areas.

Over two-thirds of childhood deaths in Ethiopia are caused by few and easily preventable conditions; mainly infections, neonatal conditions and malnutrition. The major direct causes of under five mortality, based on the 2014 WHO/CHERG estimates are pneumonia (18%), diarrhea (9%), prematurity (11%), newborn infection (9%), asphyxia (14%), injury (6%), measles (2%), malaria (3%), congenital anomalies (4%), HIV (2%), and others (21%). Under nutrition is a major underlying cause contributing to nearly half of childhood deaths. Even though underweight, stunting and wasting has declined by 39%, 31% and 25% respectively during the last 15 years, the 2014 mini EDHS estimates of stunting (40%), underweight (25%) and wasting (9%) are still very high.

The MOH developed the first comprehensive National Child Survival Strategy (2005-2015) in 2005 which was being implemented as part of the 3rd and 4th HSDP cycles. The implementation of this strategy had boosted the child survival efforts of the country through improved coordination, partnership, resource mobilization and scale up of high impact interventions. As a result of these efforts, Ethiopia has recorded significant reduction in childhood mortality and had achieved the MDG4 target in 2012. Several factors are believed to contribute to the reduction in under five mortality including the improvement in overall socio-economic status and the significant increase in access to primary health care services, from 68% in 2005 to 92% in 2010. In terms of interventions; reductions in malnutrition, increases in vaccination, Vitamin A, ITNs, family planning and water & sanitation were the main contributors for the improvements in child survival in the last two decades.

Even though 2005 – 2015 National Strategy for Child Survival provided the means for achieving the MDG4 goal, several global and national developments had happened during the last eight years necessitating revision of the strategy. A number of new interventions including community management of childhood illness (pneumonia, diarrhea, malaria, malnutrition) and neonatal sepsis (CBNC), community based nutrition (CBN), Haemophilus influenzae type b vaccine, hepatitis vaccine, Pneumococcal & Rota virus vaccines, and “Option B+” for PMTCT, were already introduced. Other new high impact interventions including corticosteroids for preterm labor at hospital level and chlorhexidine for cord care at community and facility level are in the process of introduction to address the high neonatal mortality.

There is also a need to scale up existing high impact interventions whose population coverage lags behind the target such as skilled birth attendance & early postnatal care; and treatment interventions including ORS & Zinc, antibiotics for pneumonia, ACT for malaria and ART for HIV infected children. In line with the current focus on facility delivery, clean and safe delivery by HEW is no longer included in the list of newborn and child survival interventions in areas where there are accessible health centers.

Thus, the revision of the current strategy was imperative to consolidate the encouraging gains in child survival and the long-term vision of the country to end all preventable child deaths by 2030.

The goal of this National Newborn and Child Survival Strategy (2015-2020) is to reduce under five mortality from 64/1,000 (2013 level) to at least 29 /1,000, infant mortality rate from 44/1000 to 20/1000 and NMR from 28 to 11/1,000 by 2020.

This strategy would be implemented in line with other relevant national strategic plans including; HSTP (HSDP V), the Roadmap for Accelerated Reduction of Maternal and Newborn Mortality, the National Nutrition Program, the EPI Comprehensive Multi-Year Plan, the National strategic Plan for Malaria Prevention Control & Elimination, the National strategic Plan for Elimination of MTCT of HIV, One WASH National Program, iCCM and CBNC implementation plan. The strategy is also linked to the post MDG agenda – the commitment of government of Ethiopia for ending preventable child mortality in a generation time.

The key guiding principles for implementation of the revised strategy focus on: equity and accessibility; community engagement, empowerment and ownership; efficient use of resources; innovation and use of evidence based interventions, provision of quality MNCH services, strong monitoring and dissemination of best practices.

A package of 34 high impact and cost effective newborn and child survival interventions are prioritized with coverage targets for 2019/20. The continuum of care approach will be used to

rollout the delivery of the selected high impact newborn and child health interventions addressing particular needs of women and children across time (pre-pregnancy, pregnancy, delivery, postnatal period, infancy and childhood) and the different mix of the interventions are packaged to be delivered at household/community, population oriented outreach services and individualized clinical care levels. In rural area health posts, health centers and primary hospitals will serve as service delivery points while the health development army platform will be used to empower and engage the community. In urban areas the first entry to the health system will be health centers that will provide basic and emergency care for communities, hospitals will serve as referral facilities for advanced newborn and child health care. Health development army working hand in hand with the urban health extension workers will be the crucial community networks that will mobilize communities and engage them in the planning and implementation newborn and child health services in urban. The strategy emphasizes the need for intensified effort in regions requiring equitable development to address the visible gap in survival and development of newborns and children across regions.

Optimal implementation of the key interventions will prevent deaths of 415,688 and 210,234 under-five and neonatal deaths, respectively, over the period of five years. Optimal implementation of the selected newborn and child survival interventions requires mobilizing a total of **US\$ 1.16 billion (ETB 23.2 billion)** in five year period. Existing funding channels (channel 1a, channel 1b, channel 2 and channel 3) will continue to be used as financing arrangement in the implementation the interventions through direct funding by the government or by health development partners. In addition, the FMOH will strengthen its effort to expand the fund base of the *Technical Assistance Pooled Fund* and will work with the health development partners to continue the *MDG Performance Fund* after the end of the MDG period in some form or shape. FMOH will also work with regional governments and health bureaus to scale up the Community Based and Social Health Insurance schemes to insure financial sustainability of the health system.

National newborn and child survival partnerships and coordination platforms will be strengthened at all levels (from national to Wereda levels) under the leadership of the FMOH. Structures to scale up selected newborn and child survival interventions will be strengthened through harmonization of efforts and mobilization of needed resources. Progress will be monitored annually using standard indicators. HMIS, population surveys including the EDHS in 2015 and 2020 will be used to monitor progress over years and evaluate achievement of the planned targets.

1. INTRODUCTION AND RATIONALE

Ethiopia has made considerable progress in reducing under-five mortality rate. According to the 2014 UN Inter-agency Group for Child Mortality Estimation (UN-IGME) report, Ethiopia is one of the eight high-mortality countries (together with Bangladesh, Malawi, Nepal, Liberia, United Republic of Tanzania, Timor – Leste, Niger and Eritrea) where the under 5 mortality has declined by two thirds, thus achieving MDG4 three years ahead of the 2015 deadline (UNIGME ,2014). However, children still continue to die of easily preventable and treatable diseases for which low cost and effective interventions exist. In addition, there has not been significant reduction in neonatal mortality(WHO, 2014). Much remains to be done to maintain gains in the last two decades and accelerate progress to reach post MDG targets, thus calling for a revision of the current child survival strategy.

The National Strategy for Child Survival developed in 2005, provided platform for implementation of key interventions to reduce child mortality in line with achieving the millennium development goal related to reduction of child deaths by two third. Since its development in 2005 several evidence-based interventions that need to be incorporated in the strategy have been initiated. These include community management of pneumonia through Integrated Community Case Management (iCCM); community based newborn sepsis management through the Community Based Newborn Care (CBNC); Newborn Intensive Care Unit (NICU); Newborn Corner; introduction of Hemophilus Influenzae, Pneumococcal, and Rota virus vaccines to EPI; and shift of PMTCT to “Option B+”.

Moreover, a changing landscape due to population dynamics, urbanization, double burden of communicable and non-communicable diseases as well as malnutrition, industrialization, globalization, climate change and technologies indicate the need for continuous update of global and national strategies. It is therefore necessary to develop a follow up newborn and child survival strategy in light of the new high impact interventions and priority target groups, service delivery approaches and aligning with international and national policies and strategies. Above all, the strong political commitment to consolidate the encouraging gains in child survival and the long-term vision to end preventable newborn and child deaths necessitated the need for development of a comprehensive newborn and child survival strategy ahead of the life span of the 2005 – 2015 strategy(FMOH, 2005). In the current strategy more emphasis is given to interventions addressing priority causes of newborn mortality and improving nutritional status of children.

Thus, the new strategy fine tunes, contextualizes and incorporates high impact newborn and child survival interventions and service delivery models that have gained global acceptance, keeping the primary healthcare approach at the core. The service delivery model will be based on life cycle approach and ensuring continuum of care across time: adolescence, pre-

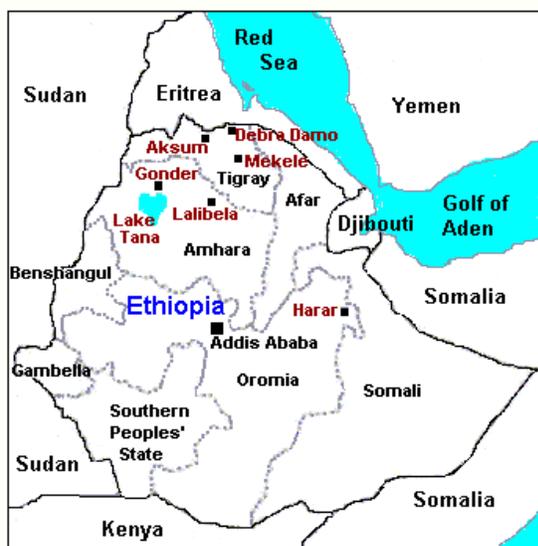
pregnancy, childbirth and postnatal period, childhood and through reproductive age and service delivery levels: at home and community level, through primary and referral care services of health facilities. The strategy also ensures linkage across maternal, newborn and child health service delivery points within health facilities with the aim of avoiding missed opportunities and provision of comprehensive service for newborns and children. This approach is based on the sound premise that health of an individual across the life stages and levels of delivery are interlinked.

The development of this strategy is informed by the child survival situation analysis that identified critical factors, bottlenecks and solutions. The strategy also builds upon the 2005 – 2015 National Child Survival Strategy to consolidate gains from successful interventions and strengthens effective universal coverage for proven existing interventions. The strategy is developed around strengthening the health care system, giving priority to universal coverage with special focus on addressing inequity in access to and utilization of newborn and child health services and improvement of quality of services together with community mobilization for demand creation and utilization of health services. The strategy also fosters multi-sectoral and interdepartmental collaborations and partnership of all stakeholders that share common goals and vision for improved health outcomes with emphasis on the most vulnerable and underserved sections of the population. The strategy builds and aligns with strategies and vision such as HSDP, HSTP, GTP and supporting programmatic strategies of other sectors.

2: BACKGROUND

Ethiopia is situated in the horn of Africa covering about 1.1 million square kilometers area. The country shares border with Djibouti, Eritrea, Kenya, Somalia, South Sudan and Sudan. It has great geographical diversity, with high peaks ranging from 4,550m above sea level to low depressions of 110m below sea level. There are topographic-induced climatic variations broadly categorized into three: the “Kolla”, or hot lowlands, below approximately 1,500 meters, the “Wayna Degas” at 1,500-2,400 meters and the “Dega” or cool temperate highlands above 2,400 meters. More than half of the country lies above 1,500 meters. Malaria transmission in Ethiopia occurs mainly in areas up to 2000 meters, which accounts for about 75% of the total landmass.

Ethiopia is the second most populous country in Africa with a total population of 90.1 million, of which more than 84% live in rural areas. It has a broad geographic spectrum and over 80 distinct ethnic groups. Ethiopia’s population is young with 45% being under the age of 15 and 14.6% (13.2 million) being under the age of 5. About 23.4% of the population is women of reproductive age (FDRE, 2008). The average household size is 4.8 people, with the urban population having a smaller mean household size (3.6) than the rural population (5.1) (CSA, 2014). Life expectancy at birth is 64 for both sexes with 65 years for women and 62 years for men (WHO, 2014).



Ethiopia has a federal system of government. The country is divided into nine administrative regions: Afar, Amhara, Benishangul-Gumuz, Gambela, Harari, Oromiya, Somali, Tigray, and the Southern Nations, Nationalities and Peoples Region (SNNPR); as well as two city administrations, Addis Ababa and Dire Dawa. The regions are divided into zones, woredas, and kebeles which is the lowest level of administration. The woreda is the most important local government structure, acting as the basis for most administration and management. Currently there are 956 woredas, representing around 100,000 people each and 16,541 kebele (FMOH, 2014/15), with average catchment populations of 5,000

people each.

As part of the effort to transform the country’s economy and raise people out of poverty the Federal Democratic Republic of Ethiopia developed and implemented successive national

poverty reduction programs including the Sustainable Development and Poverty Reduction Program (SDPRP), Plan for Accelerated and Sustained Development to End Poverty (PASDEP) and the recent Growth and Transformation Plan (GTP). Through implementation of these programs the country registered continuous economic growth and expanded coverage and utilization of social services. The common guiding principles enshrined in the poverty reduction programs are ensuring faster and equitable economic growth; maintaining agriculture as a major source of economic growth; enhancing expansion and quality of infrastructure development (road, water supply, electricity) and improving access to education with emphasis on girls and women enrollment. The gains recorded through implementation of the poverty reduction programs have largely contributed to the improvement of health and survival of mothers, newborns and children.

The 1993 Health Policy, founded on general principles of democratization and decentralization, has decentralized the authority in the health system through transfer of the major parts of decision making, health care organization, capacity building, planning, implementation and monitoring of health programs to regions and districts. Accordingly, the FMOH is primarily responsible for policy and guideline development and provision of technical support while the management, coordination, and administration of health services are the responsibilities shared between Woreda Health Offices (WrHOs) and Regional Health Bureaus (RHBs).

Since 1997 four successive Health Sector Development Plans (HSDPs), which are aligned with the country's poverty reduction programs, have been developed and implemented to execute key priority interventions envisioned in the national health policy. As part of the second phase of the Growth and Transformation Plan (GTP) 2015 – 2020, the government is in the process of developing the Health Sector Transformation Plan (HSTP), 2015 – 2020, with explicit goals and targets that directly and indirectly contribute to the survival and development of newborns and children. In addition, Ethiopia has led the development of the “Promise Renewed Child survival Roadmap” in 2012 with a commitment to end preventable child death with the aim of bringing down the under-five mortality rate to less than 20/1,000 live births by 2035.

To achieve the aforementioned HSDPs, FMOH has developed different strategies and programs. Some of the strategies and policies that have been adopted by the FMOH and have direct impact in improving maternal, newborn and child survival include Adolescent and Youth Reproductive Health Strategy, Sexual and Reproductive Health Strategy, Elimination of Mother to Child Transmission of HIV (PMTCT/HIV) Strategy, Maternal and Newborn Health Roadmap, Malaria Control Strategy, EPI Strategy, National Nutrition Strategy, Stunting Reduction Strategy, and Infant and Young Child Feeding (IYCF) Strategy.

There are also programmatic strategies targeting child survival at health facility and community level in the country such as Integrated Management of Neonatal and Childhood Illness (IMNCI),

Integrated community case Management (ICCM), Community Based Neonatal Care (CBNC), Newborn Corner Initiative, Neonatal Intensive Care Unit (NICU), Pediatric Referral Care, Nutrition Program, Expanded Program of Immunization, Prevention of Mother-to- Child Transmission of HIV (PMTCT) and Pediatric ART, Maternal Health Programs, and Health Service Quality Improvement Program.

The health care delivery system in Ethiopia is organized in three-tier system. The primary level health care delivery system in rural setting includes five Health Posts associated with Health Centers and Primary Hospital. In urban setting the the Health Center is primary entry point to the health system. The secondary level health care includes General Hospitals and tertiary level health care include Tertiary Hospitals. As more than 80 percent of the Ethiopian population resides in the rural part of the country, the HSDPs have given more focus to the primary health care units while strengthening the referral care at secondary and tertiary levels.

Ethiopia’s flagship Health Extension Program (HEP) is the platform for delivery of community based basic promotive, preventive and curative health services. Two Health Extension Workers (HEWs), based in the health posts that serve an average of 5,000 populations, are the primary point of entry to the health system for the rural community. HEWs, supported by the Health Development Armies (HDAs) – a network created between five households and one model family to influence one another in practicing healthy life style, work to empower the community to generate its own health. They provide set of preventive, promotive and curative health services packaged in four programmatic areas: the Family Health Services; Disease Prevention and Control; Environmental Hygiene and Sanitation; and Health Education and Communication. They serve as the backbone of the Primary Health Care Units (PHCUs) acting as the most important frontiers for newborn and child survival in the country.

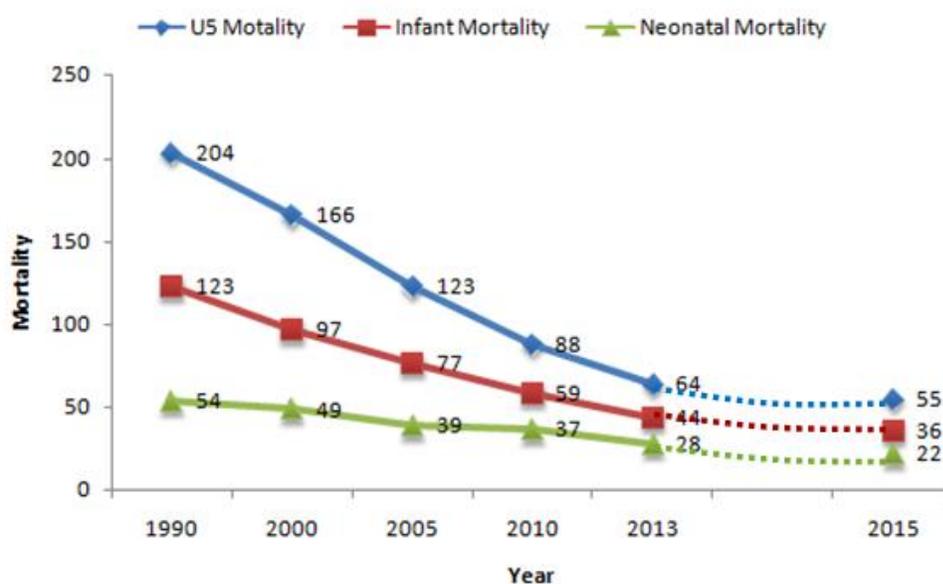
The Newborn and Child Survival Strategy will be implemented in line with the national policies and strategies discussed above and with the long-term goal of eliminating all preventable childhood deaths by 2035.

3: NEWBORN AND CHILD HEALTH IN ETHIOPIA

Trends of newborn and under five mortality

The 2014 UN Inter-agency Group for Child Mortality Estimation (UN-IGME) report estimated that Ethiopia's under five, infant and neonatal mortality rates were 64, 44 and 28 per 1000 live births, respectively. The child mortality trends in Ethiopia show a steep decline; from 1990 to 2000 with the average annual reduction (ARR) of U5MR at 2%, but the reduction rate accelerated to 5% after 2000, bringing about a dramatic decrease in under five mortality rate to the current level of 64/1000 live births in 2013. Thus in August 2013 Ethiopia was declared to have achieved MDG 4 (UN-IGME, 2013). Figure 1 shows the trend in under-five, infant and child mortality since 1990.

Figure 1: Trends in under-five, infant and neonatal mortality rates and estimated levels for 2015



(Source: EDHS 2000, 2005 and 2011 & IGME 2014 report)

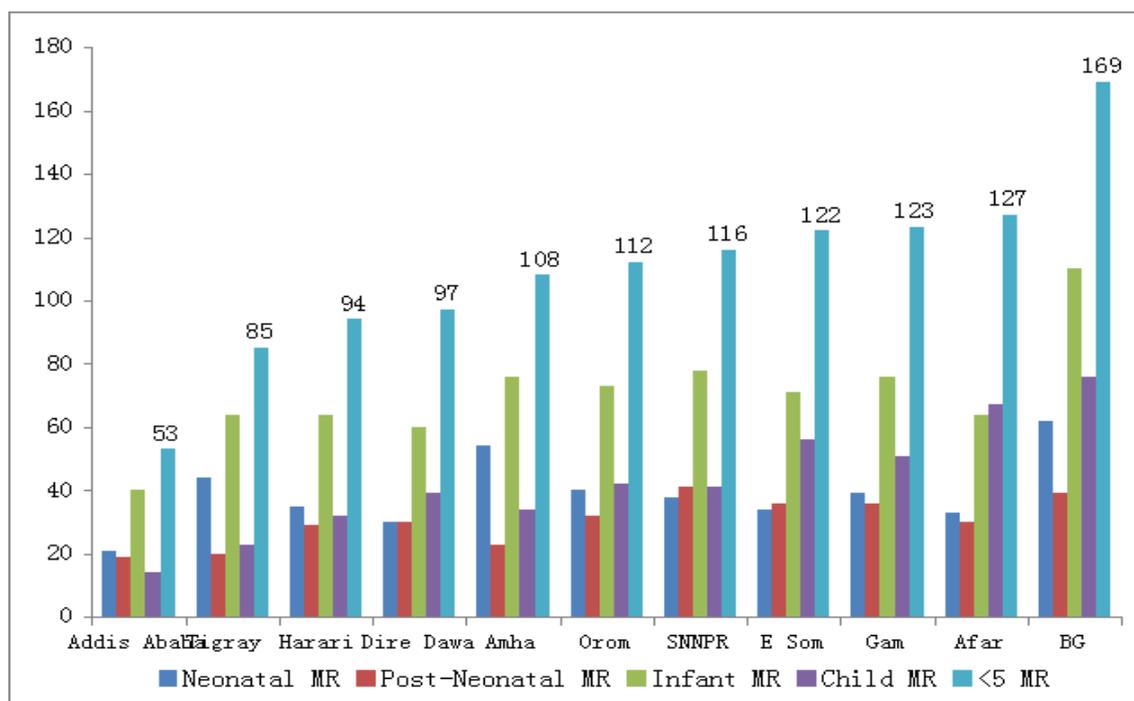
Socio demographic determinants of newborn and under-five mortality

Despite the success Ethiopia recorded in reducing under-five mortality rates still an estimated 196,000 (UN-IGME, 2014) children are currently dying each year and the reductions in mortality were not proportionate across the different childhood age groups, socio-economic strata and geographic regions of the country. There is strong association of newborn and child mortalities

with wealth, maternal educational status, residence, maternal fertility characteristics and access to safe water and sanitation.

According to the 2011 EDHS, the under five mortality among the poorest 20% the population (137/1000) was 1.6 times that of the wealthiest 20% of the population (86/1000). For children of mothers with at least secondary education it was 46/1000, but for children of mothers with no education it was 121/1000, 2.6 times as high as with that of children of mothers with at least secondary education and more than 5 times as high as that of mothers with more than a secondary education (24 per 1,000 live births). Likewise, for children who live in urban areas the mortality rate was 83/1000, whereas the rate for rural children was 114/1000, 1.4 times as high as that of the mortality rate for urban children. There was also wide regional variation in mortality with U5MRs ranging from as low as 53 in the capital city of Addis Ababa to as high as 169 in Benishangul-Gumuz and 127 in Afar, the two developing regional states of the country (CSA, 2011).

Figure 2: Regional variation in under-five mortality, EDHS 2011



Low total fertility rate (TFR) impacts child survival by bringing optimum spacing between successive pregnancies. Birth intervals of less than two years are associated with a higher mortality of newborn and children. In the 2014 mini EDHS report the TFR for Ethiopia was estimated at 4.1 children per woman with 4.6 and 2.3 children per woman in rural and urban

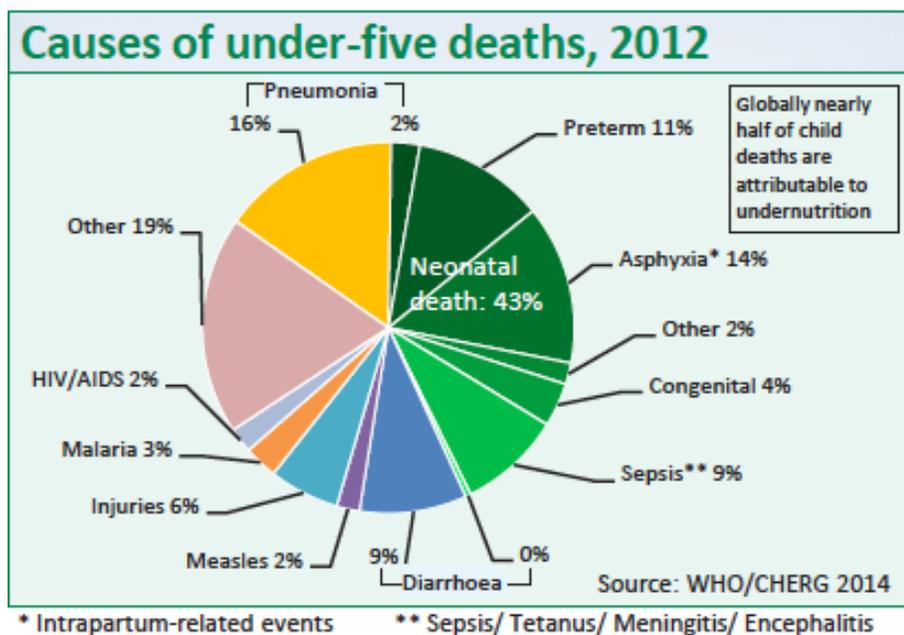
areas, respectively (CSA, 2014). According to the 2011 EDHS report, children born within less than two years after the preceding birth are 2.5 times likely to die within the first year of life (CSA, 2011).

Access to improve sanitation and water supply is associated with lower risk of mortality among under-five children. Based on the further analysis of DHS surveys from 171 countries representing data of 1.1 million under-five children access to improved sanitation was associated with lower risk of child mortality (OR=0.77, 95% CI of 0.68 – 0.86) (Gunther F. et al 2011).

Causes of Newborn and Child Mortality

The major causes of under five mortality, based on the 2014 WHO/CHERG estimates for Ethiopia (Figure 3), were acute respiratory infection (ARI) (18%), diarrhea (9%), prematurity (11%), sepsis (9%), birth asphyxia (14%), injuries (6%), and measles (2%) and others (21%) (Count Down to 2015, 2014).

Figure 3: Causes of Under-five mortality, Ethiopia



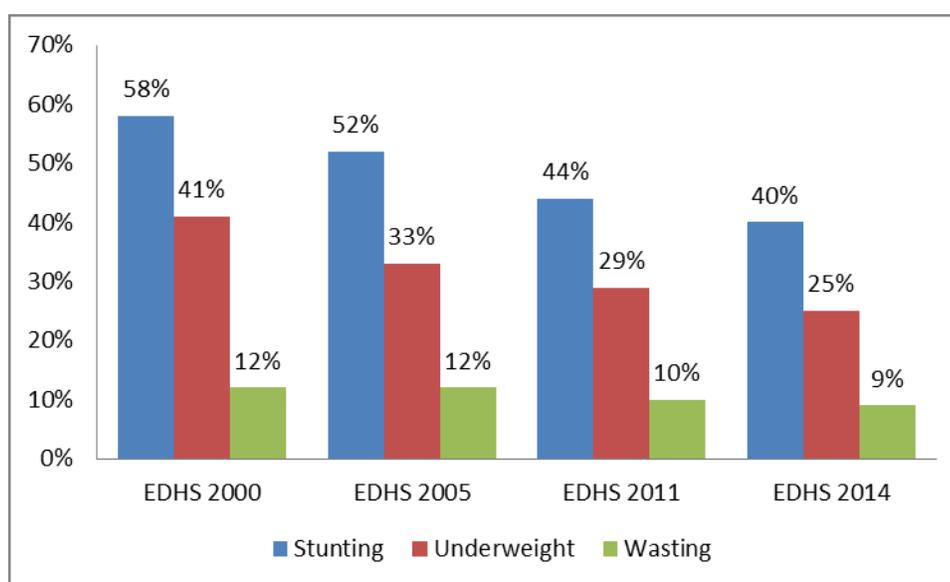
(Source: WHO/CHERG 2014)

Malnutrition is a major contributor to child mortality in Ethiopia being an underlying cause for nearly 45% of under-five deaths (Lancet 2013). According to the 2014 mini EDHS, 40% of all children under five were stunted and about 18% percent were severely stunted. Nine percent

were wasted and 3% severely wasted. Nutritional status also varies greatly by region, with the highest level of stunting rates being in Tigray, Amhara, Afar and SNNP regions. Figure 4 shows the trend in under nutrition during the last decade (CSA, 2014).

Malnutrition is also widespread among Ethiopian women (CSA, 2011). The 2011 EDHS revealed that the level of chronic malnutrition among women in Ethiopia is high, with 27 percent of women either thin or undernourished—that is, having a body mass index (BMI) of less than 18.5 kg/m². It appears that malnutrition remained high with small decline over the last decade. The few previous studies in Ethiopia also found a similarly high prevalence of low BMI in the range of 16%-32%. Regional variation in the prevalence of under-nutrition among women has been apparent; in some regions such as Afar and Gambella rates exceeding 40% were recorded. In a multivariate analysis, higher risk of underweight is significantly associated with rural residence, living in lowland, having low education, being poor, a lack of household toilet facility and being anemic (In depth Analysis of EDHS 2000-2011). Ethiopian Mothers are also affected by micronutrient deficiencies. The prevalence of anemia among women in the reproductive age group (15–49) was found to be 17 percent. Evidences showed that fetal growth restriction is more prevalent among malnourished and anemic mothers decreasing their chance of survival.

Figure 4: Trends in under-five nutritional status



(Source: EDHS 200, 2005, 2011 and mini EDHS 2014)

When are children dying?

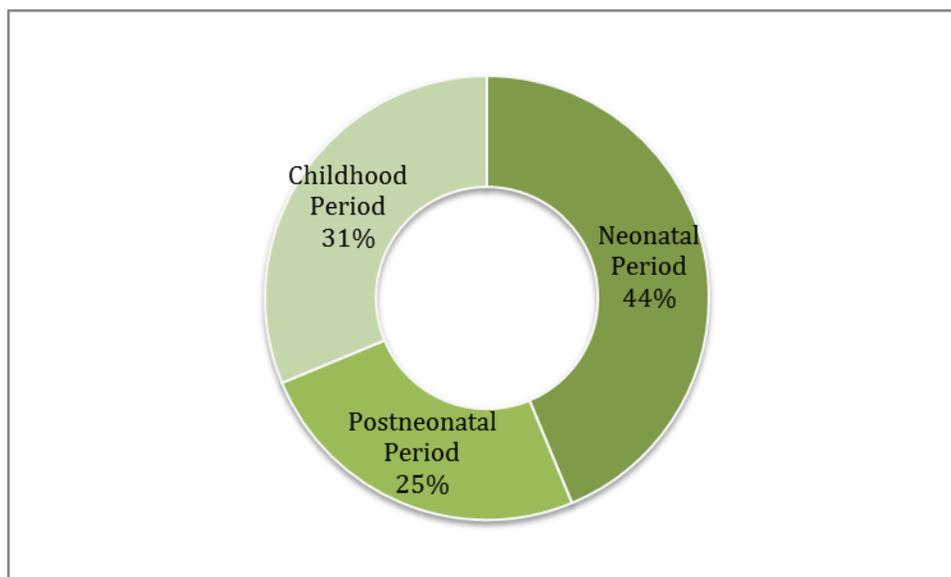
As shown in Figure 5 below, a higher proportion (44%) of under-five deaths in Ethiopia occur within the first 28 days of life due to the high rate of death of neonates. The majority of

newborn deaths occur during the first week of life (75%), and about 25% to 40% of deaths occur within the first 24 hours. The most common causes of death are prematurity (37%), infection (28%), and asphyxia (24%) (Liu L. et al. 2012).

Despite Ethiopia’s remarkable reductions in infant and under-5 mortality and achievement of MDG four three years ahead of the deadline, the reduction in neonatal mortality has not been as impressive. Neonatal mortality has been stagnant over the past five to ten years with neonatal mortality accounting for 44% of the under 5 mortality and over half of infant deaths. The IEGM 2014 estimate indicated that there is a further decline in U5MR, IMR and NMR of 64, 44 and 28/1000 live births, respectively but the proportion of newborn death is still high.

To achieve significant reduction in newborn mortality it is important to give due emphasis to neonatal health problems that are readily preventable or treatable with proven, cost-effective interventions that can significantly contribute to the reduction of under-five mortality by 2020 and beyond. Newborns will benefit from the already introduced high impact interventions that include iCCM, CBNC, “Option B+” for PMTCT, and other interventions that will be introduced, including corticosteroids for preterm labor and chlorhexidine for cord care. There is also a need to scale up existing high impact interventions whose population coverage lags behind the target such as skilled birth attendance & early postnatal care that will significantly contribute to the reduction of neonatal mortality.

Figure 5: When are Children Dying?



(Source:IGME 2014 Estimates)

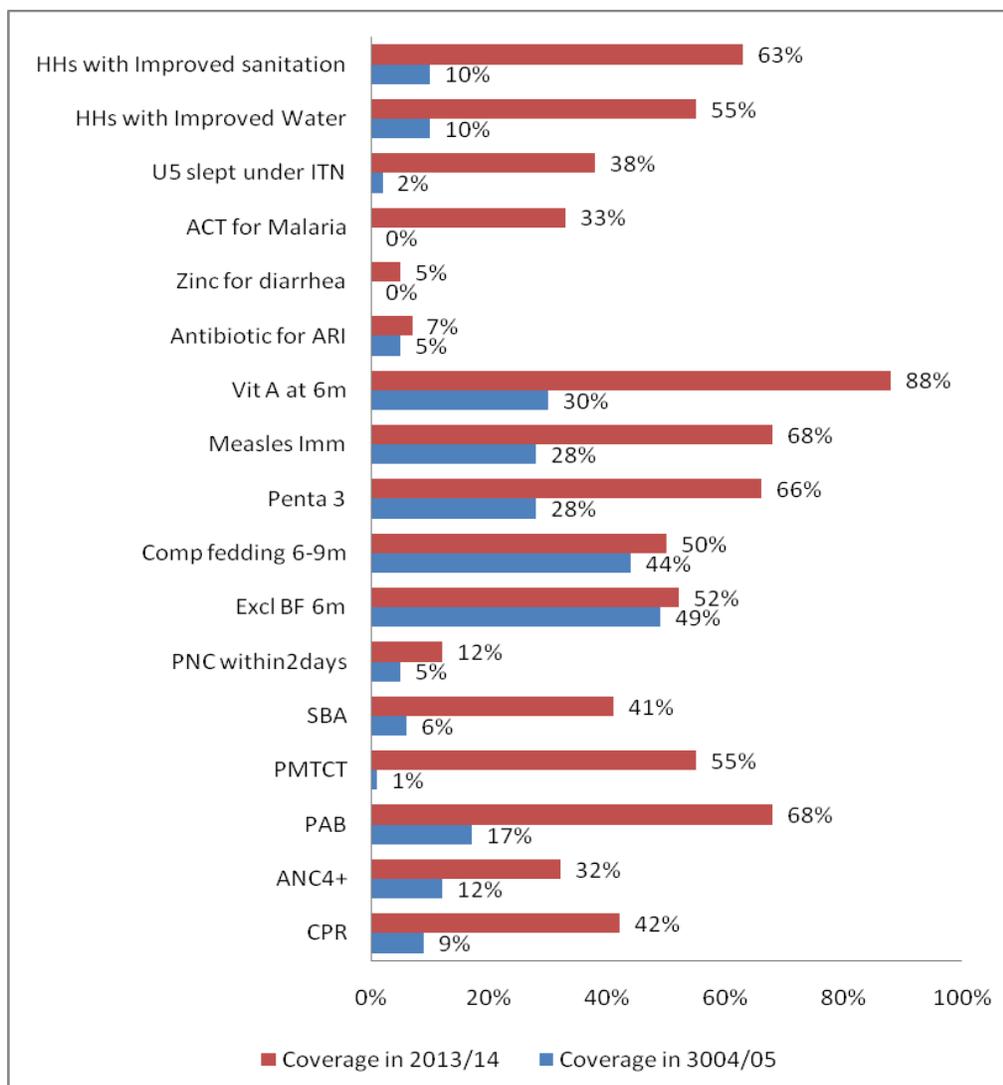
Ethiopia has been implementing key neonatal and child survival interventions, however, coverage of services remains low for most of the interventions. Figure 6 shows the trend of selected newborn and child survival interventions since 2005. Evidently, significant improvements in coverage had been observed primarily in preventive interventions including contraceptives, immunizations, vitamin A, ITN, water and sanitation interventions. On the other hand, care seeking for common illnesses and utilization of clinical services namely; skilled attendance, post-natal care, treatment for common illnesses including pneumonia, diarrhea, malaria and pediatric ART/PMTCT remain low.

Barriers to MNCH service utilization are in general related to costs of transport and treatment; access to services due to distance to health facilities and inadequate transport services, sociocultural factors and lack of knowledge of the causes of diseases and available appropriate treatment (Nathan P. Miller 2013, FMOH, 2014). Supply side barriers such as low quality of health care services caused by unavailability of medicines, medical supplies, equipment, adequate number and mix of skilled and committed staff result in low client satisfaction and care seeking. Lack of functional performance monitoring system and accountability, and failure to scale up best practices are also among the challenges to attain optimal service utilization.

Where in Ethiopia are children dying?

Further analysis of under-five deaths in Ethiopia show that three agrarian regions combined (Oromia, SNNP and Amhara) contribute to 87% of absolute number of under-five deaths in the country, with Oromia taking the highest share (42%). However, in terms of risk of death a child born in Benishangul Gumuz region has the highest risk of death followed by Afar, Gambella, Ethiopia Somali and SNNP. With the same token, a child born in rural area has higher risk of death compared to one born in urban area in any particular region in the country. Interventions that aim to reduce the under-five mortality need to also target to close the gap in these evident disparity in mortality in those different contexts.

Figure 6: Coverage of key neonatal and child survival interventions in 2005 and 2013/14.



Sources: EDHS 2005, EDHS 2011, mini-EDHS 2014, HMIS 2013/14, MIS 2011, ICS 2012, WASH Inventory 2012

Success factors for reduction of under-five deaths in Ethiopia

As indicated in the previous sections Ethiopia registered marked reduction in child mortality and achieved the MDG4 target in 2012, three years ahead of the timeline. There was no national level evaluation conducted to document factors that contributed to this success. However, a number of factors within and outside the health care system have synergistically contributed towards the success the country has achieved.

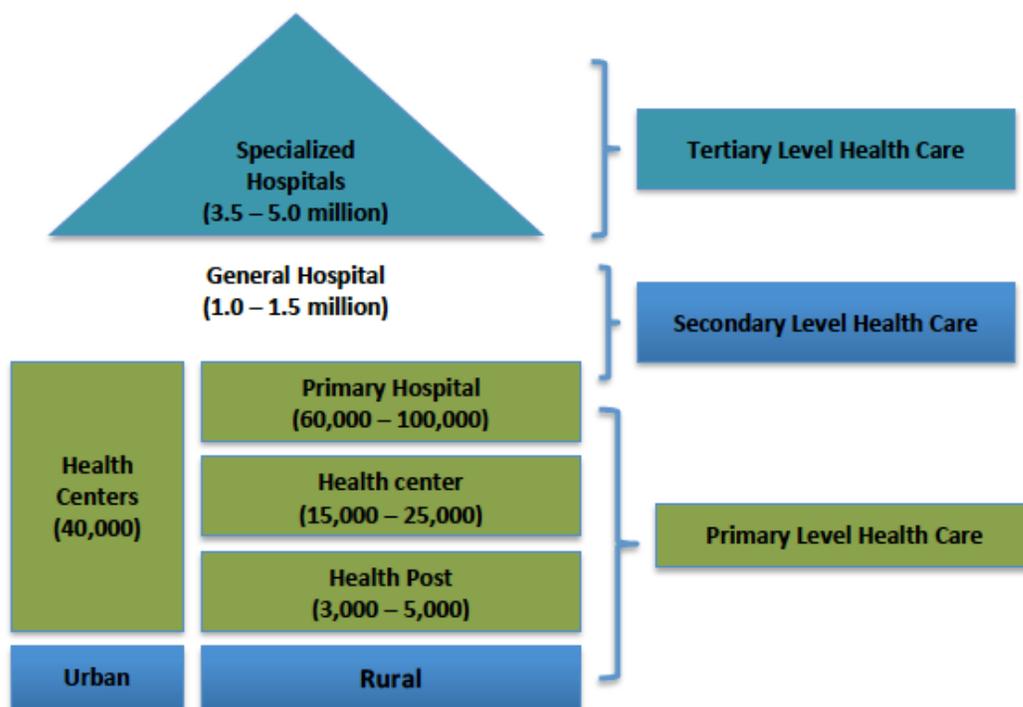
The government of Ethiopia has brought maternal, newborn and child health as priority political agenda and maintained its commitment to improving the health and survival of women and children in the country. This has been demonstrated by massively expanding access to and utilization of key health care services through HEP, government's flagship program, and the expansion of primary and secondary level health care through accelerated expansion of health centers and hospitals throughout the country. The country also managed to equip a large proportion of these facilities with basic equipment and supplies along with staffing them with trained health workforce that run the facilities. The health care finance (total health expenditure per capita) showed a paramount improvement in the last decade with introduction of new schemes including retention and utilization of revenues in the health facilities; opening of private wings in hospitals; community based health insurance and social health insurances. As a result improvements in coverage of effective interventions to prevent or treat the most important causes of child mortality was achieved; in particular essential immunizations, malaria prevention and treatment, vitamin A supplementation, birth spacing, early and exclusive breast feeding are some of the factors that contributed to the success (FDRE/MoH, 2014). Although it is moderate, the country also achieved increase in coverage of skilled attendance, post-natal care, treatment for common illnesses including pneumonia, diarrhea, malaria and pediatric ART/PMTCT.

In addition to the successes within the health system, it is important to note the investments made in other sectors that contributed to the survival and wellbeing of children in the country. This has increased over years along with economic development the country has enjoyed in the last decade. Access to and universal enrollment in primary education throughout the country has been expanded with concurrent expansion of secondary and higher education. Infrastructure including road, electricity and telecommunication has expanded in many folds, and access to water and sanitation facilities improved. Agricultural productivity and food security has been improved. Women participation in leadership and political structures has showed a significant improvement (FMOH (draft), 2014).

3.1 The Health System

Health Systems consists of all organizations, product, people and actions whose primary intent is to promote, restore or maintain health. Ethiopia has a three-tier health care delivery system. The primary level health care delivery system in rural setting includes five Health Posts (each serving 3,000 – 5,000 population), Health Centers (15,000 – 25,000 Population) and primary hospital (60,000 – 100,000 population). In urban setting the health care system is organized with health center as primary entry point (each serving about 40,000 population). The secondary level health care delivery system include general hospital (1-1.5 million people) and tertiary level health care delivery system include tertiary hospital (3.5 to 5 million people) (FMOH, 2010).

Figure 7. Three tier health care delivery system in Ethiopia



Source: FMOH HSDP IV

The Ethiopian health care delivery system is augmented by the rapid growth of the private-for-profit and NGOs sector that are playing significant role in expanding the health service coverage and utilization. To catalyze the engagement of the private sector in health service delivery and foster partnership between the public and private sectors the FMOH launched the Public Private Partnership (PPP) strategy. Forums of private sectors are established focusing on quality improvement and regulatory schemes. The PPP strategy will be an opportunity to promote and strengthen local manufacturing of essential medicines and commodities for newborn and child survival interventions. This will ensure sustained availability of those commodities and significantly reduce the lead-time between their production and use. Currently, manufacturing of chlorhexidine and RUTF is undergoing. The private sector and NGOs also play pivotal role in ensuring access to health services and products through engaging in community engagement and social marketing. There is a need to improve the coordination and collaboration effects of PPP as engaging and expansion of the private sector and NGOs can enhance the inter-sectorial collaboration, and improve investment in the health sector.

3.1.1 Primary Level Health Care

The PHCU provides basic promotive, preventive and curative health care services to its catchment population through participation of communities in the planning and implementation of the health care services (FMOH, 2010).

With rapid expansion of the physical infrastructure, equipping the primary level health care (health posts, health centers and primary hospitals) throughout the country and training and deployment of health care workers the primary level health care structure and function was revitalized and health posts were made to administratively and technically link with the health centers. The mandate of the woreda health offices remained to be management and coordination of the operation of all PHCUs within their woredas including planning, financing, monitoring and evaluation of health programs and services deliveries. To guide the revitalization of the PHCU in 2012 a guideline on ‘Primary Health Care Unit Linkage and Referral’ (FMOH, 2012) was prepared by FMOH and distributed to regions.

Expansion of the coverage of primary level care across the country has improved access and utilization of important maternal, newborn and child health services by women and children. In addition to physical access, health facilities and health posts are incrementally expanding the MNCH service packages they are providing. However, as much as there are increasingly more MNCH interventions made available to women and children, the access to and utilization of the services varies by areas and sections of population calling for working towards ensuring universal coverage. Moreover, there are evident gaps in quality of the available services provided in the health facilities and health posts.

3.1.2 Community Empowerment, Engagement and Participation

FMOH along with health development partners has been implementing different models of engaging community members in the plan and implementation of health programs. Following the launch of the Health Extension Program (HEP) in 2005 the engagement of community members in the health service program planning and implementation became more systematic and organized (FDRE/MoH, 2007). However, the types, roles and levels of engagement of the community health workers were not consistent throughout the country. Cognizant of these challenges and with the aim of standardizing the community health workers’ types, roles and level of engagement and to ensure scale up of key positive family and community health practices, in 2011, the government of Ethiopia launched the Health Development Army (HDA) structure (FDRE/MoWYCA, 2014).

Health Development Army: is a network of women that are led by women who have adopted better health behavior through completing the 16 packages of HEP. Leaders of the

network of women influence women under their leadership to practice a healthy life style. Five of such 1-to-5 networks of women form a health development team. The leaders of the networks are selected by the members of the network with the key criteria including being a model family in the community through completing implementation of the 16 packages of HEP and getting trust and respect by the members in mobilizing the community. The formation of the health development teams and the 1-to-5 networks is facilitated by HEWs and the Kebele administration. The HDA is designed to accomplish the following critical tasks(FMOH, 2012/13):

- Identify locally salient bottlenecks that hinder families from utilizing key services and implementing the HEP, and prioritize those that they want to address as a team
- Come up with feasible strategies to address these problems
- Implement the strategies and evaluate their activities.

A total of 2.3 million women were organized into 442,773 health development teams voluntarily mobilized to lead 1-to-5 networks of women throughout the country; the plan is to mobilize up to 3 million one-to-five networks of women to work alongside the HEWs in supporting families to adopt a healthy behavior(FDRE Ministry of Health, 2014).

For regions that require equitable development, a social mobilization strategy is developed with an objective of sensitizing and mobilizing the leaders and the community at large to implement the HEP with special focus on maternal, neonatal and child survival. There are social mobilization committees established at all level; starting from kebele to federal level. Each of the committees has five to seven members (including political leaders, religious and clan leaders, health managers, party members and representatives of communities/women). The committees use checklists to monitor performances of selected indicators, meet regularly to review progress and make decisions and recommendations to address challenges faced. Each of the committees has specific responsibilities and duties with reporting and feedback mechanisms (FMOH, 2012).

Since the implementation of the strategy in regions requiring equitable development, a series of consultative and sensitization meetings have been conducted at regional, zonal and woreda levels chaired by political leaders at the respective levels. At the end of each session, a clear plan of action to cascade mobilization to kebele and household levels were developed and signed by all parties committing to the implementation. Other subsequent sessions are organized to assess progress and address any potential bottlenecks.

3.1.3 Secondary and Tertiary Level Health Care

Based on the recent Service Provision Assessment (SPA) conducted in Decemer 2013 in Ethiopia there were total of 163, 73 and 35 primary, general and referral hospitals, respectively, of which 40, 71 and 30 respectively were fully functional.

According to the 2013/2014 HSDP IV annual performance report the total number of health posts reached 16,048 making functional health posts to population ratio at 1:5,264 and to date the total number of health centers constructed reached 3,245, reaching a functional health center to population ratio of 1: 26,858. The coverage of BEmONC in Health Centers and CEmONC in Hospitals has increased to 55.8% and 82.6%, respectively (FDRE Ministry of Health, 2014).

3.2 Management and Support

Ethiopia has a health system with decentralized decision-making powers by regions and districts. The mandate of the federal government is mainly developing policies, regulations, and strategies at federal level while regions have overall responsibilities of management of the health service delivery, which include management of the health facilities, personnel and health training institutions within the regions. As the capacity of zones and woredas became stronger some of the tasks of the regions are being shifted to lower level and regions would focus of overall coordination, monitoring and evaluation of the implementation of the health programs in their jurisdiction.

The FMOH has recently reformed its structure to improve its efficiency in providing country-wide leadership of the health program. The reform was reflected in the reorganization of departments at the ministry by program and operational areas. Accordingly, five main programs were organized under the Maternal and Child Health Directorate (Maternal Health Program with family planning, Child Health Program, Immunization Program, Nutrition Program and PMTCT programs) and responsible FMOH experts were assigned to lead and coordinate the MNCH activities with development partners and donors.

3.3 Health Service Quality

The FMOH acknowledges that quality of health care did not catch up with the expansion of health care services in the country. Quality of MNCH care encompasses several aspects including availability of equipment, supplies, guidelines and protocols; knowledge, skills, training, experiences and motivation of health workers; supportive supervision facilities receive; and satisfaction of clients with the care they received. The strategic initiatives of the FMOH with respect to improving quality of care include improvement in the emergency management system, regulation of non-public providers, blood transfusion provision, medical care SOP's and monitoring, integration of service provision, and functional referral services.

The hospital reform agenda was launched in May 2010 with the Ethiopian Hospital Reform Implementation Guideline (EHRIG) as the tool for the reform. Currently all public hospitals are

participating in the quality improvement initiative. At present, it is estimated that some 50% – 70% of these standards are being regularly implemented by hospitals, with the standards relating to outpatient services, inpatient services, and pharmacy services most effectively implemented. Implementation of referral and nursing standards are partially being implemented, while those most neglected are the ones relating to medical equipment and financial management.

3.4 Health Care Financing

Financing continues to come from multiple sources including households' out-of-pocket spending, the government treasury (federal, regional, district, and municipal levels), bilateral and multilateral donors and nongovernmental organizations (NGOs), private enterprises, and parastatal sources (FMOH, 2014). Though steadily growing, Ethiopia's health spending is far from adequate for financing of essential health care services. To address this chronic challenge the government of Ethiopia has been working to improve efficiency of the health system to ensure proper distribution and use of the available resources and mobilize additional resources from health development partners. The following strategies have also been implemented:

- The initiation and development of risk pooling mechanisms such as social health insurance and community-based health insurance schemes
- Retention and utilization of user fee revenues at health facility level
- Introducing private wings in the public hospitals

Informed by evidences from the Fifth National Health Account (NHA) studies conducted over the years, the health system has undergone reforms including, retention and utilization of revenue, administration of the fee waiver system, establishment of a functioning facility governance body, outsourcing of non-clinical services, establishing private wings in health facilities and the exemption of certain services. The assumption is that the ensuring access and utilization of quality MNCH services by women and children through the financial reforms would largely improve the health of women and children.

3.4.1 Total Health Expenditure

This fifth round of NHA revealed that there has been a tremendous increment in health spending both in nominal and per capita terms. Nominally, National Health Expenditure (NHE) increased from Birr 11.1 billion (US\$1.2 billion) in 2007/08 to over Birr 26.5 billion (US\$1.6 billion) in 2010/11. Per capita NHE increased modestly, from US\$16.09 per capita in 2007/08 to US\$20.77 in 2010/11. This figure is far below the HSDP-IV per capita spending target of US\$32. The amount is also low compared with Ethiopia's peer countries and much less than the US\$44 per capita recently recommended by WHO.

The NHA report also identified proportions of health expenditure by source of financing. In rank order, these were 49% by development partners, 34% by household out-of-pocket expenditure, 15.6% by Government (central and regional) and the rest by a combination of employer insurance schemes and other private sources.

National Health Expenditure, at the current market price, increased by 138 percent between 2007/08 and 2010/11. Government contributions grew over time but most of the increment came from households (34%) and donors (49%). As a result households are burdened by high out-of-pocket costs for health that usually are incurred at time of sickness. It is critical to work on sustainability of health sector financing as well as on reducing the financing burden on households, particularly at time of sickness.

Child health is one of the priority areas in the HSDP IV but the share of spending is one of the lowest compared with the other priority areas.

HSDP IV set a target of increasing total health spending from 16.1 USD/Capita to 32.2 USD per capita and the share of government health budget as a proportion of total government budget from 5.6% to 15% to meet the target set by the Abuja Declaration. Although allocation for health showed an average 3.6 billion birr per year increment the share of health from the total government budget stood at about 8.5% over the last years of the HSDP IV implementation (FMOH, 2012/13). This has significant impact on the quality of MNCH care provided at health facility and community levels.

3.4.2 Financing Channels and Arrangement

Three channels of funding currently operate in the country, which also work for the health sector. *Channel 1a* (un-earmarked): is used by the government itself whereby at each administrative level, the specialised finance bodies control the release of funds and report upwards on their utilisation. This is also the channel that is used by donors providing budget support and PBS component-I. *Channel 1b* is an earmarked fund transferred through MoFED, with funds from each donor being tagged (with a two figure code), and sent to the region and zone/Woreda (with a location code). The funds are reported on and accounted for separately, and used to pay only for activities agreed by the particular donor, often according to its specific procurement and disbursement procedures. *Channel 2* is a channel whereby the regional and zonal/woreda finance bodies are by-passed and development partners work directly with sector units at each administrative level to expend and account for funds. There are variations on this channel. Some development partners centralize disbursement responsibility at the federal level (so that even regional contractors are paid centrally). Other donors have worked directly with regional and/or Woreda administrations. *Channel 3* is whereby development partners usually carry out any procurement and pay the contractor directly. Government

merely agrees to, and budgets for, what is to be provided by the donor, and ensures that the expenditures are included in any overall HSDP accounting and auditing.

In-addition to the above three channels, there are two channels which operate specifically in the health sector. These are: 1) *Technical Assistance Pooled Fund*: established in 2005 by five development partners to provide support to FMOH this fund fills critical gap in capacity of government, is the first of its kind as a pooling arrangement in the health sector. It provides support in technical assistance, sector reviews, operational research, and other activities at FMOH level. Currently UNICEF manages the fund. 2) *The MDG Performance Fund*: MDG Performance Fund started working in 2007 with funds from GAVI for health systems strengthening. A huge financing gap in health systems, maternal health, and the particular nature of health services – a large number of public good elements in service delivery and a high proportion of recurrent inputs bought internationally (medicines, commodities and equipment) – warrants the establishment of a strong FMOH Level MDG Performance Fund to support the implementation of HSDP. The MDG Performance Fund will help to finance four thematic areas: a) Health extension programme, b) Service delivery (MCH), c) Public health commodity procurement and d) Health systems strengthening.

3.4.2 Health insurance

In Ethiopia out of pocket payment by households covers 48% of the child health expenditure (FMOH/NHA-5, 2014). Ethiopia adopted two health insurance models: community based health insurance (CBHI) for the rural population and informal sector, and social health insurance (SHI) for the formal sector (including pensioners). In 2010 the SHI Proclamation was approved by the Council of Ministers and by the Parliament and in 2011 The Ethiopian Health Insurance Agency (EHIA) has been established. Since its establishment EHIA has been working on building its capacity and leveling the ground to phase in the health insurance scheme.

The CBHI scheme has brought promising results during its pilot phase. In the 13 woredas where it was piloted the scheme registered 47% of the households (total: 141,656 households, 119,426 paying and 22,230 non-paying) and generated ETB 20,671,525.07. Through use of the CBHI the health service utilization has substantially increased in the pilot woredas reaffirming the plan to use the scheme along with SHI as vehicle for Ethiopia's pursuit towards universal health coverage.

4: NEWBORN AND CHILD SURVIVAL STRATEGIC FRAMEWORK

4.1 Vision

- By 2035, every child in Ethiopia enjoys the highest attainable standard of health and development with an end to all preventable child deaths.

4.2 Goals

- To reduce under-five mortality from 2013 level of 64/1,000 to 29/1,000, infant mortality rate from 44/1000 to 20/1000 and NMR from 28 to 11/1,000 by 2019/20.

4.3 Objectives

- To ensure effective universal coverage of high impact neonatal and child survival interventions with special focus on the poorest and marginalized sections of the population including in regions requiring equitable development
- To ensure provision of high quality essential health care for mothers, newborns and children at the community and health facility levels
- Ensure community empowerment and demand creation for effective use of newborn and child survival interventions and promote key family and community care practices

4.4 Guiding Principles

The following guiding principles are compatible with the common values of the Health Sector Transformation Plan and the “*Promise Renewed Call to Action for Child Survival Roadmap*”. The principles provide guidance for policy decisions, program priority setting, design of interventions, approach to implementation; and resource allocation criteria for achievement of the Strategic Plan.

The key guiding principles include:

- **Country ownership, leadership and accountability** – The FMOH and RHBs will continue to own, lead and coordinate the implementation of the national newborn and child health strategy.
- **Equity and Accessibility** - Provision of comprehensive quality universal health services will be emphasized across income, gender, ethnicity, and geographical regions and lifestyles.
- **Community engagement, empowerment and ownership.** Communities should meaningfully participate in planning, implementation, monitoring and evaluation of interventions at family, community, and facility level.
- **Integration:** integration of the interventions across the health service delivery mechanisms starting from the primary to the tertiary levels as per the standards set for each delivery mechanism.
- **Partnership** - National and international partners have been, and continue to be, very important in the development of child survival and health programs in Ethiopia. The Health Sector Development Plan encourages participation of the private sector and the NGO sector by creating an enabling environment for participation, coordination and mobilization of funds.
- **Efficient use of resources:** the strategy recognizes the importance of resources and it emphasizes the need for efficiency with which resources will be spent.
- **Innovation and use of technology:** Medical equipment and technologies are vital components of the health care delivery and a system for maintaining the supply chain must be in place. In addition, the strategy will employ innovative health care delivery approaches to ensure access to and quality of newborn and child survival interventions.
- **Responsiveness:** to changing economic, social, environmental, climate, technical and epidemiological content to provide effective support to ensure adaptability and sustainability.
- **Evidence based decision-making** - the strategy will promote the performance of basic and operational research to support the decisions made at all levels with evidence.
- **Quality of health care services** – the strategy will ensure interventions implemented has a skill mix of human resources at all levels of the health system to increase both coverage and quality.

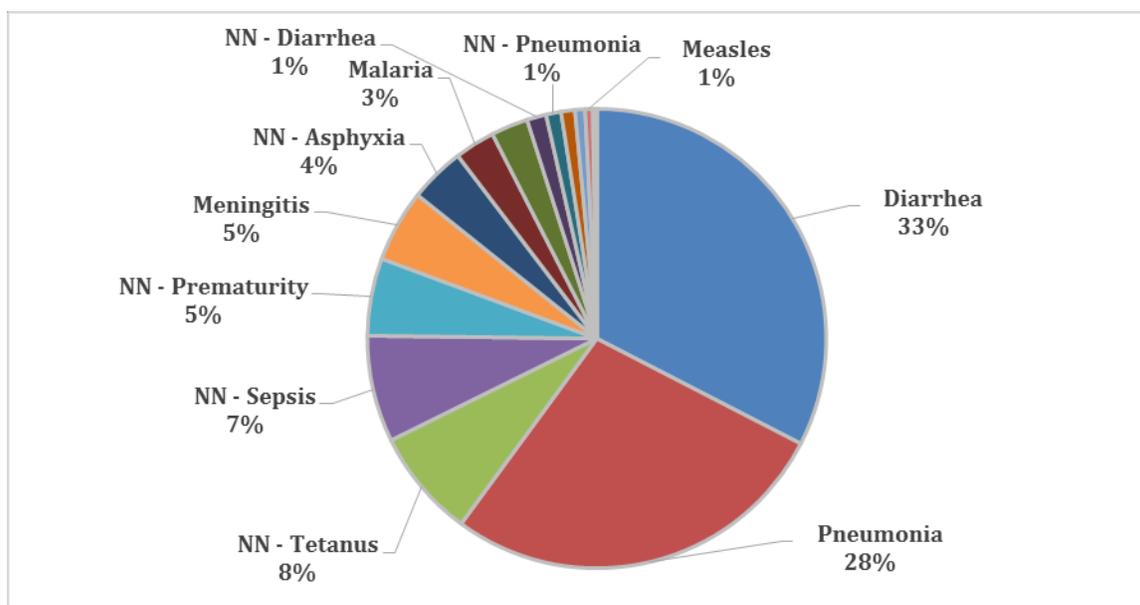
5: KEY NEWBORN AND CHILD SURVIVAL INTERVENTIONS

This section defines target conditions to be addressed in the implementation of the national newborn and child survival strategic plan and highlights priority high impact interventions for newborn and child survival.

5.1 Target conditions for child survival

The target conditions account for the majority of the under-five mortality in Ethiopia, and are therefore the focus for interventions in this Strategic Plan. The 2013 global LiST estimates for Ethiopia showed that neonatal complications (prematurity, asphyxia, neonatal sepsis, neonatal tetanus, neonatal pneumonia, and other neonatal causes) are the leading causes of under-five mortality in Ethiopia. Pneumonia and diarrhea remain to be leading causes of death for children who passed their neonatal period. As shown in Figure 8, pneumonia, diarrhea and the three newborn conditions account for nearly 90% of childhood lives to be saved during 2015/16 – 2019/20 by implementing the package of newborn and child survival interventions.

Figure 8: Proportions of lives saved by addressing leading target conditions, 2015-2020



However, the estimation showed that meningitis, malaria, measles and HIV/AIDS play a relatively minor role. The LiST model also estimated that optimal implementation of the

package of key interventions will prevent a total of 415,688 and 210,234 under-five and neonatal deaths, respectively, over the period of five years. The five most effective interventions are: institutional delivery, oral rehydration solutions (ORS), case management of pneumonia, breastfeeding and case management of severe neonatal infections. Overall, implementing the revised package of high impact interventions is expected to reduce the under-five mortality to 29/1,000 live births by 2020.

Table 1: Additional deaths prevented in children under-five years of age relative to impact year

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2015-2020
Optimal case scenario												
Total (0-60 months)	20,659	43,054	59,635	84,253	98,027	110,060						415,688
<1 month	7,904	19,637	27,437	44,632	52,024	58,600						210,234
1-59 months	12,755	23,418	32,198	39,621	46,002	51,460						205,454
Medium case scenario												
Total (0-60 months)	11,255	21,721	34,290	43,721	52,562	66,418	75,727	85,268	94,848	104,418	113,946	229,967
<1 month	3,176	6,281	12,291	15,733	19,074	27,894	32,349	36,902	41,485	46,079	50,669	84,449
1-59 months	8,079	15,440	21,999	27,987	33,489	38,524	43,377	48,366	53,363	58,339	63,277	145,518
Base projection - No coverage change												
Total (0-60 months)	276	412	348	268	235	221	205	196	192	184	179	1,760
<1 month	29	54	77	99	122	143	149	153	157	161	165	524
1-59 months	247	358	271	168	113	78	56	43	34	23	13	1,235

5.2 Priority High Impact Interventions for newborn and child survival

The selection of interventions as key high impact intervention builds on previous achievements and it is based on current evidences on the feasibility and effectiveness of implementing the identified interventions. The selection of preventive and promotive approaches is based on reduction of exposure to infection and the likelihood that exposure leads to disease. Clinical care is added to reduce the likelihood that the disease or condition will lead to death.

The strategy encompasses almost all of the high impact interventions listed in the 2005 national strategy plus other high impact cost effective interventions and delivery mechanisms which were either already introduced or in the process of being introduced in the Ethiopian health system (Table 2). Preparations are being finalized to introduce three new high impact neonatal interventions, namely; community case management of neonatal sepsis, chlorhexidine cord care at birth both at community and facility levels and provision of antenatal corticosteroids at hospital level to prevent deaths among preterm births.

New vaccination programs that are on pipeline for introduction in Ethiopia in the next couple of years include birth dose HepB, two doses of Intradermal Poliomyelitis Vaccine (IPV), inclusion of Meningitis A vaccine in routine vaccination schedule, Human Papilloma Virus (HPV) vaccines for 9 – 13 years old children, and combined Measles vaccine (Measles with Rubella).

Table 3 shows the full package of the interventions to be implemented till 2020 and beyond including the baseline coverage and targets for 2020. The data source for 2014 baseline was taken from 2013/14 HMIS and from the different community/facility based surveys. Effort was made to identify up to date population based data for each interventions. However, in cases where such data could not be found estimates of the 2014 baseline coverage were made by expert groups based on available data from previous period or based on facility-based estimates.

Table 2: Child survival interventions adopted/on process of adoption after the launch of the 2005 national child survival strategy

SN	Intervention or delivery mechanism	Expected impact	Year of implementation
1.	Pentavalent vaccine	Prevention of 5 diseases including pneumonia due to Hib	2007
2.	Long term family planning by HEWs	Increasing birth spacing to improve birth weight and survival of children	2008
3.	Community case management of Pneumonia	Community based pneumonia case management is estimated to result in a 20% reduction in all cause of under one mortality & a 24% reduction in all causes of under-five mortality.	2010
4.	Community case management of uncomplicated Severe Acute Malnutrition	Believed to significantly improve access to the treatment of uncomplicated severe acute malnutrition at community level.	2008
5.	Pneumococcal Vaccine	A PCV conjugate vaccine is expected to prevent about 26% of radiologically confirmed pneumonia (a severe morbidity proxy for mortality).	2011
6.	Helping babies breath	Improving management of newborn asphyxia	2010
7.	MgSO4 for management pregnancy induced hypertension	Improved management of PIH and reduced risk of preterm	2010
8.	Zinc for management of diarrhea	Improve treatment outcome of diarrhea diseases	2011
9.	Rota virus vaccine	Effectiveness against the fraction of diarrhea deaths attributable to rotavirus is estimated to be 74% (95% CI: 35–90%).	2013
10.	Option B+ for PMTCT	Believed to significantly increase the numbers of pregnant women being enrolled on ART and increase the likelihood that infants born to HIV-positive mothers will be born HIV-negative.	2013
11.	Community case management of neonatal sepsis	Community-based packages with management of neonatal sepsis by health extension workers achieved large reductions in NMR of 34% to 62% in research studies in India and Bangladesh.	2013

12.	Chlorhexidine for cord care	Cleansing a newborn's umbilical cord with chlorhexidine can reduce an infant's risk of infection of the cord by 68% and death during the first weeks of life by 23%	2014
13.	Antenatal Corticosteroids for preterm labor	Provision of antenatal steroids decreases neonatal mortality among preterm infants (<36 weeks gestation) by 31%.	2014
14.	Birth dose HepB	Prevents Hepatitis B infection	To be introduced
15.	IPV (Intradermal Poliomyelitis Vaccine 2 doses)	Prevents infection by Poliomyelitis	To be introduced
16.	Meningitis A – will be included in the routine vaccination schedule	Prevents infection by Meningitis A	To be introduced
17.	HPV (human papilloma virus) – will be provided for 9 -13 year old girls	Prevents infection by Human Papilloma Virus and Cervical Ca	To be introduced
18.	Combined measles vaccine – Measles with Rubella	Prevents infection by Measles and Rubella	To be introduced

Table 3: Package of high impact Child survival interventions along continuum of care, current coverage & 2020 targets

Continuum of Care level	S.N.	Key intervention	Delivery Level	Baseline coverage (2013/14)	2020 target	Source of current baseline data	
Pre-pregnancy	1.	Family Planning (CPR)*	All levels	42%	55%	Mini EDHS 2014	
	2.	Focused ANC (4/more visits)*	All levels	32 %	95%	Mini EDHS 2014	
	3.	Iron Folate Supplementation*	All levels	34 %	95%	Mini EDHS 2014	
	4.	ART for HIV+ pregnant women*	Clinical Care	61%	95 %	HMIS 2006 EFY	
	5.	Tetanus Toxoid immunization (PAB)	All levels	68%	90%	EPI Cluster Survey 2012	
	6.	ITNs for pregnant women (malarious areas)*	All levels	35%	80%	MIS 2011	
	7.	Antenatal Corticosteroids for preterm labor*	Clinical care (Hospital)	No data	90%		
	8.	Mg So4 during pregnancy & at Birth*	Clinical care	1%	90%	UNICEF 2012	
	Birth and postnatal	9.	Skilled attendance at birth*	Clinical care	15 %	95 %	Mini EDHS 2014
		10.	Neonatal resuscitation	Community care	No data	90%	
				Clinical care			
		11.	Chlorhexidine for cord care	Community care	0%	90%	
				Clinical care			
		12.	Thermal regulation	All levels	25%	95%	Mini EDHS (Assisted by skilled attendant and HEW)
13.	KMC	Community care	10	90			
		Clinical care					
14.	Antibiotics for Premature Rupture of Membranes (PROM)*	Clinical care	No data	90%			

Continuum of Care level	S.N.	Key intervention	Delivery Level	Baseline coverage (2013/14)	2020 target	Source of current baseline data
Infancy	15.	Postnatal visit for mothers and newborns within 48 hours *	Community care Clinical care	12%	50%	Mini EDHS 2014
	16.	Antibiotics for neonatal sepsis	All levels	No data	80%	
	17.	Early initiation of breastfeeding (within 1 hour of birth)	All levels	51%	90%	EDHS 2011
	18.	Exclusive breastfeeding (up to 6 months)	All levels	52 %	80%	EDHS 2011
	19.	Complementary feeding (age 6-9 months) and continued breast feeding	All levels	50 %	100%	EDHS 2011
	20.	Penta_3 (DPT-HePB-Hib) vaccination	All levels	66%	96 %	EPI Coverage survey 2012
	21.	Pneumococcal vaccine	All levels	80%	96%	HMIS EFY 2006
	22.	Rota Virus vaccine	All levels	42%	96%	HMIS EFY 2006
Childhood	23.	Measles immunization	All levels	68%	96 %	EPI Coverage Survey 2012
	24.	Vitamin A supplementation every 6 month *	All levels	88%	95%	Post EOS/CHD validation survey
	25.	Antibiotics for pneumonia	All levels	7 %	80 %	EDHS 2011
	26.	Oral Rehydration Therapy (ORS) and Zinc	All levels	31%	90%	EDHS 2011
	27.	Malaria ACT treatment	All levels	33%	100 %	Malaria indicator survey 2011
	28.	Antibiotics for dysentery	Clinical care	14.4%	80%	EDHS 2011

Continuum of Care level	S.N.	Key intervention	Delivery Level	Baseline coverage (2013/14)	2020 target	Source of current baseline data
	29.	Pediatric ART*	Clinical care	9.5%	80%	National HAPCO 2014
	30.	Children sleeping under insecticide-treated nets (ITNs)*	Community care Outreach service	38%	80%	Malaria indicator survey 2011
	31.	Management of children with SAM*	All levels	70%	90%	Program report
	32.	Improved drinking water (household)*	All levels	55%	100 %	WASH Inventory2012
	33.	Improved sanitation facilities (household)*	All levels	63 %	100%	WASH Inventory 2012
	34.	Deworming*	All levels	88%	90%	HMIS 2005

*All these interventions are cost effective evidence based interventions that are known to have high impact on newborn and child mortality. The costing for these interventions is not included in this Newborn and Child Survival Strategy. The cost of these interventions is addressed by specific programs (maternal, nutrition and other strategies) and by the HSTP where all programs align to the national plan and targets.

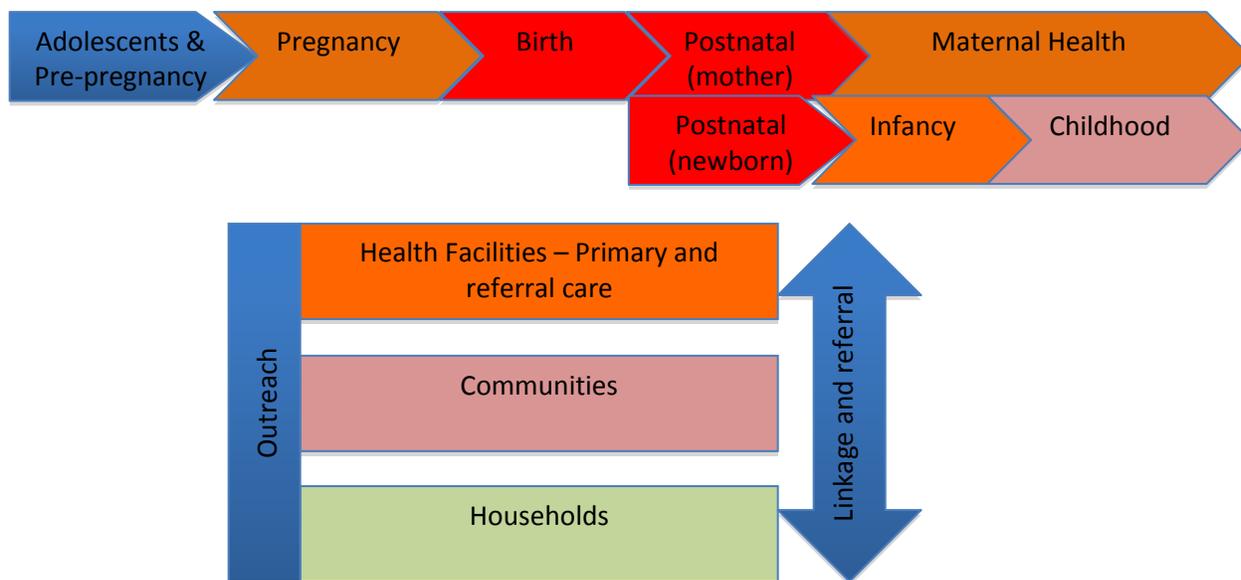
6: SERVICE DELIVERY LEVELS AND STRATEGIES

One of the most important steps to improving child survival is the adoption of a comprehensive approach to service delivery. The continuum of care approach as a service delivery model is comprehensive on many fronts. The central premise of the model is the delivery of essential services for mothers, newborns and children in an integrated package at critical points in the life cycle, in a dynamic health system. The continuum of care has two dimensions: *time* of care giving and *place* and approach of care giving.

In time - an effective continuum of care connects essential maternal, newborn and child health packages throughout adolescence, pregnancy, childbirth, postnatal and newborn periods and into childhood building upon their natural interactions throughout life. Through ensuring linkage across maternal, newborn and child health service delivery points within health facilities it will be possible to avoid missed opportunities and provide comprehensive service for newborns and children at community and facility levels.

In place - an effective continuum of care strengthens the links between the home and the first level facility and hospital assuring the appropriate care is available in each place (Figure 9). Strategies involve improving the skills of health workers, strengthening health system supports, and improving household and community practices and community actions for health. This approach brings care closer to the home through outreach services and promotes referral by strengthening access to and improving the quality of services at peripheral and district level facilities.

Figure 9: Continuum of care approach: *time* of care giving and *place* and approach of care giving



The service delivery strategy is presented in line with the three key objectives and based on the implementation of high impact interventions at each service delivery level starting from the household/community up to the referral or specialized care facilities.

Community based interventions: Ethiopia has demonstrated that basic health services can be made accessible to large proportion of the population through the government-led cost effective community based health delivery platform. Building on the government flagship health extension program at the community level priority will be given to scale up of community based newborn and child survival interventions through HEWs and HDAs. The main objective is to achieve universal coverage with community-based promotive, preventive and curative interventions and strengthen the capacity of HEWs and HDA networks.

Population oriented outreach services: In a country like Ethiopia, where geographical access presents major barriers, population oriented outreach preventive-promotive interventions provide an avenue for community action, expanded access and coverage for preventive, promotive and basic curative services; and creates the required linkages between community services and health facilities. The newborn and child survival strategy will provide population-oriented scheduled services by health workers with basic skills during regular outreach services, child health days and campaigns. This may be delivered through routine and scheduled outreach or mobile health care in a health facility in a scheduled manner. When scheduling outreach and mobile health services attention will be paid to variations in access to services within the community. Focus will be on areas or populations that are underserved. Outreach and mobile health services will be planned with the community and community members will provide support to services such as tracking defaulters. Evidences show that increased coverage of outreach and facility-based preventive interventions will reduce neonatal mortality by 3.5 percent, under-five mortality rate by 3.3 percent in countries with similar setting (Malawi/MOH, 2008).

Individual oriented clinical services: This service-delivery mode requires effective functional and referral coordination among the health service extension workers and health workers with advanced skills (nurses, midwives, health officers and physicians trained in emergency obstetric, newborn and child health care). Services should be available on a permanent basis. The individual oriented clinical services addresses individual specific clinical services required by newborns, children or pregnant women who are sick or giving birth. Although preventive and promotive services are important in reducing under-five morbidity and mortality ending preventable newborn and child deaths requires back-up facility-based high quality services for referral care for sick children, pregnant women presenting with complications, and women requiring emergency obstetric care to the very minimum. Once key bottlenecks are addressed, the individual-oriented clinical services can lead to 25.8% decrease in neonatal mortality rate and 23.6% reduction in under-five mortality (Malawi/MOH, 2008).

Infrastructure development will be required to strengthen this strategy. Accelerated expansion and staffing of primary health care facilities with strong two-way referral system along with strengthening the secondary and tertiary care facilities, and training of health workers is needed to achieve universal coverage. Accelerated in-service training of medical and paramedical staff on key MNCH interventions is essential to fill the skill gaps. However, follow up after training and supportive supervision remain the key actions to reinforce skills and facilitate implementation. To ensure sustainability of having health staff adequately skilled in MNCH services, the pre-service education programs should be strengthened and incorporate new knowledge on high impact MNCH interventions.

Quality of newborn and child care: Improving quality of newborn and child health care is a priority cross cutting issue that FMOH will invest on in the next years. To this effect FMOH will strengthen its work to improve the quality of newborn and child health services provided at the three levels discussed above. The strategic initiatives on quality of care including improvement in the emergency management system, regulation of non-public providers, blood transfusion provision, medical care SOPs and monitoring, integration of service provision, and functional referral services will be fully implemented. In addition, all hospitals will be made to fully implement standards in the Ethiopian Hospital Reform Implementation Guideline (EHRIG). Innovative quality improvement approaches will be tested, documented and scaled up.

In the next pages the strategy outlines key interventions and initiatives across the three objectives that will be implemented at the three levels of care discussed above. Some of the interventions may contribute to achievement of more than two or all the three objectives but are presented under the objective to which they will contribute more.

6.1 Objective 1: Ensure effective universal coverage of high impact neonatal and child survival interventions with special focus on the poorest and marginalized sections of the population and regions that require equitable development

6.1.1 Community Based Interventions

Essential medicines, commodities and logistics

- Improve system for procurement of essential medicines and commodities.
- Strengthen integrated pharmaceutical logistic system at the PHCU and drug supply and management system at community level
- Ensure all health posts have means of transport (bicycle) or equivalent and basic kit for community health work, including medicine kit, information, education and communication (IEC) materials, boots, uniform and identification tag.
- Promote local production of commodities (chlorhexidine, zinc/ORS etc)

Capacity of HEWs

- Deploy appropriate number of HEWs to ensure the health posts are adequately staffed for provision of health services at all time at home, within sub-village and at the health posts.
- Train HEWs on basic preventive and curative services such as essential newborn care, iCCM, CBNC, CMAM, maternal health, clean delivery, KMC in case of emergencies etc.

Provide counseling and care at home and health posts

- Conduct regular mapping of households with pregnant women, newborns and under-five children
- Conduct planned monthly household visits to provide individual counseling on high impact maternal-newborn health and child survival interventions and provide care as needed
- Regularly follow up with case-specific households to monitor family compliance with pregnancy monitoring and monitoring of child growth and development in the areas of: nutrition, breastfeeding, immunization schedules, vitamin A, treatment advice, etc.
- Provide targeted basic health promotive, disease preventive and curative services at home and in the health posts

Monitoring, supervision and reporting

- Improve the use of the family folder and community health information system to monitor the uptake of high impact interventions.
- Conduct monthly reporting and supervision meetings between each extension worker, and the health center staff of the catchment area to ensure data use for decision making

- Strengthen the primary health care unit to facilitate supportive supervision and referral linkage
- Establish system for use of data in the bimonthly meetings of HEWs with health development team leaders to review their progress and improve the service delivery for mothers, newborns and children.
- Work in collaboration with other community structures such as the agriculture extension workers to increase coverage of high impact MNCH interventions and birth registration through coordinated effort.
- Strengthen the mhealth for Ethiopia's large rural based communities to accelerate public health intervention through real time data exchange, referral linkage, strengthening supply chain and disseminating important information.

6.1.2 Population Oriented Outreach Services

Essential medicines, commodities and logistics

- Establish supply and inventory management system for essential products at health posts
- Build capacity of staff on supply chain fundamentals and provide basic skills trainings
- Ensure availability of vehicles and motorbikes with fuel for integrated outreach and referral services

Capacity of Health workers and HEWs

- Train additional health workers and extension workers for integrated outreach services (EPI, growth monitoring, ITNs, ANC, iron-folate, vitamin A, de-worming, family planning, HTC, etc);

Provision of outreach counseling and care

- Integrate service provision of: CBNC, EPI, growth monitoring, ITNs, ANC, iron-folate, vitamin A, de-worming, family planning, HTC, etc;
- Conduct regular, defined and predictable scheduled outreach from the HP/ HC to each identified community site
- Enhance supportive supervision at all levels.

Monitoring and supervision

- Strengthen monitoring system for all high impact interventions provided at outreach and static service delivery points (HMIS) and conduct periodic population-based Surveys..

6.1.3 Individual Oriented Clinical Services

Essential medicines, commodities and logistics

- Ensure availability of tools and forms required for Integrated pharmaceutical logistics system (IPLS) for HPs
- Procure and install essential diagnostic and other equipment required for out-patient and in-patient MNCH care;
- Ensure availability of medicine, commodities and logistics to strengthen the care for newborns with especial attention to premature and low birth weight babies in the NICU

Capacity of Health workers

- Fully operationalize Human Resources for Health Development Plan prioritizing underserved areas for delivery of high impact interventions for maternal, newborn and child care;
- Recruit/deploy adequate staffing for each level of care as per FMOH staffing norm;
- Train at least 2 staff per health facility in skills for delivery, essential newborn care, newborn sepsis management, lifesaving skills, and emergency obstetrics care, including management of 3rd stage of labour during deliveries;
- Train at least 2 staff per health facility in skills for IMNCI and other child health initiatives
- Train nurses at least 4 to 6 nurses per hospital to care for newborns in the NICU wards
- Train medical and paramedical university faculties as trainers of trainers in reproductive, maternal, newborn and child health and nutrition care, including IMNCI and iCCM in order to roll out in-service and pre-service training;
- Integrate training in newborn and IMNCI, pediatric AIDS care, and emergency obstetrics care in pre-service training curriculum of all medical and paramedical training institutions;

Infrastructure

- Construct additional primary healthcare facilities to achieve minimum standard norm per defined population (e.g. 1 health centre for with BEmONC service for 25,000 population; and 1 hospital with C-EmONC services for 100,000 population);
- Renovate/refurbish primary hospitals to provide quality MNCH services
- Ensure that each primary hospital avails space for a level I NICU and the secondary and general hospitals for level II and above NICUs
- Ensure availability of reliable water, sanitary, communication, ambulance and power supply in health facilities with backup plan for power outages

Provision of individual oriented clinical care

- Provide 24 hour integrated maternal, newborn and child health services in health facilities particularly for skilled delivery, EmONC and pediatric emergency care;
- Ensure there is a functional newborn corner in each of the health centers, and newborn ICUs in hospitals to take care of high risk and sick neonates

- Ensure that blood transfusion services are available at C-EmONC facility

Monitoring and evaluation

- Conduct maternal, newborn and child death surveillance and response system in health facilities and clinical audit
- Provide regular integrated supportive supervision to enhance quality of care

6.2. Objective 2: Ensure provision of high quality essential health care for women and children at the community and health facility levels

The provision of high quality essential health care for women and children needs a continuous effort to improve process, output and outcome by addressing the challenges and bottlenecks across the components of the health system. The strategy for quality health care provision will be the main guide and some of the activities are listed below.

6.2.1 Community Based Interventions

The key strategies to scale up quality high impact interventions provided through community-based services are:

Availing essential medicines, commodities and logistics

- Strengthen PHCU to ensure uninterrupted availability of essential medicines, commodities and supplies
- Establish and regularly restock the medicine kit with defined list of essential medicines, consumables and basic supplies (anti-malarials, amoxicillin dispersible tablets, paracetamol, oral rehydration salts (ORS), de-worming tablets, Ready to Use Therapeutic Food (RUTF), amoxicillin etc.) for all health posts

Capacity building for HEWs

- Equip HEWs with communication and counseling skills
- Strengthen the skills of HEWs on assessment and management of newborn and child health problems at community level (including ICCM, CBNC, CBN, EPI, TB/HIV) and prompt referral to the next level.
- Provide refresher and further training of HEW to ensure delivery of quality basic health promotive, disease preventive and selected curative services

Community empowerment and demand creation

- Institutionalize home visits by HEWs to all households within catchment kebele/population, including more frequent visits to households with high-risk families.
- Develop tools and checklists that HEWs can use to review performance of 1-to-5 HDA network and team leaders during their regular meetings

Provision of basic family-level counseling and curative services

- Build capacities of HEWs and caregivers to prevent, manage and provide basic care for common causes of childhood illnesses at home, such as treatment of malaria, pneumonia, diarrhea, neonatal sepsis, uncomplicated acute malnutrition and de-worming of children, etc.

- Ensure health posts provide women and adolescent friendly services in a manner that guarantees confidentiality and privacy
- Strengthen linkages and two way referral between health facilities and health posts/communities

6.2.2 Population Oriented Outreach Services

Essential medicines, commodities and logistics

- Review procurement procedures for vaccines and injection materials
- Strengthening integrated pharmaceutical logistic system at the PHCU
- Improve maintenance system of cold chain, transport means and other equipment.

Capacity of Health workers and HEWs

- Ensure outreach services are women friendly services, address concerns of women and families and guarantees confidentiality and privacy

Provision of outreach counseling and care

- Conduct community-level micro-planning of integrated outreach services, identifying and mapping under-served communities and developing schedules to extend outreach services to them
- Strengthen referral system and continuum of care in outreach programs
- Ensure outreach programs are designed to extend mentorship and supportive supervision to lower level facilities

Monitoring and supervision

- Strengthen monitoring system for all high impact interventions provided at outreach and static service delivery points (HMIS).

6.2.3 Individual Oriented Clinical Services

Essential medicines, commodities and logistics

- Improve supply chain and delivery management for essential drugs and supplies of health facilities with no stock-out of any single newborn and child survival supply for more than 2 weeks;
- Equip BEmONC centers with essential equipment and supplies including equipment and supplies for neonatal care;
- Support establishment of transport and communication systems (ambulances and other local transportation systems) for referral between rural areas and nearby health facilities.

Capacity of Health workers

- Institutionalize motivation and retention mechanism for health workers at health facility level
- Work with health professional associations; to implement continuous professional development of health workers, improve quality of pre-service and in-service training of health workers

Provision of individual oriented clinical care

- Improve transport system for emergency referrals of obstetrics and pediatric cases between community level/health center and hospitals; and
- Introduce MNCH quality standards and continuous assessment of the performances of the standards to improve quality of care in service provision in all health facilities.

6.3 Objective 3: Ensure community empowerment and demand creation for effective use of newborn and child survival interventions and promote key family and community care practices

6.3.1 Community Based Interventions

Community empowerment and Demand Creation

- Update and/or develop IEC/BCC materials and related tools to promote use of high impact MNCH services as per the national health communication material development and implementation guidelines.
- Conduct regular household visits to provide individual counseling on high impact reproductive/maternal-newborn and child survival interventions and care as needed
- Strengthen the 1-to-5 HDA network by training network leaders on key MNCH behaviors and practices for awareness creation to support issues related to maternal-newborn and child survival.
- Conduct regular mass media activities preferably radio programme to support maternal, newborn and child survival initiatives.
- Build capacity of Media such as health sector program columnists, producers/directors, editors and journalists of both print and electronic media at national/regional levels on newborn and child survival issues.
- Promote uptake of high impact newborn and child survival interventions to ensure Home Delivery Free (HDF) communities and Community Led Total Sanitation (CLTS)
- Use religious leaders, and social gatherings (like Gedda and irecha, in Oroma Culture) to show /discuss various newborn and child survival issues with caregivers and at the health facilities during waiting time, including videos, audios and printed tools.
- Use traditional communication strategies such as the '*Dagu*' in the Afar region.
- Document, disseminate and scale up newborn and child health best practices
- Conduct national level mega events involving celebrities etc – Awarding for good performance and contribution (Health workers, administrative and political leaders, key civil society organizations)
- Fully engage leaders and groups at different levels and capacities, including parliamentarians, in promotion of newborn and child survival interventions
- Use mHealth platform – Mobile based collection and delivery of MNCH information to mothers, families and health workers, for referral and linkage, for tracking, for data collection and reporting, and track of stock levels and reporting of stock outs of supplies
- Create consultation/mentoring platform by linking HEW and HDA with newborn and child health specialists at different levels through use of mobile applications

6.3.2 Population Oriented Outreach Services

Community mobilization for services uptake

- Social mobilization for improved uptake of preventive services, including male involvement and defaulter tracking for immunization, ANC, HTC, FP, etc;
- Utilize the HDA and 1-to-5 network to identify families who need services that can be provided through community scheduled outreaches, and trace defaulters.

6.3.3 Individual Oriented Clinical Services

- Train health workers on Interpersonal Communication skills and key approaches and communication skills as per FMOH standard training guidelines, manuals and tools.
- Support innovative social marketing of newborn and child survival interventions using private sector partnership.

6.4 Supporting Strategies

The following strategies aim to strengthen the health systems and support the child survival strategy through logistics management; resource mobilization and management; and human resources for health.

6.4.1 Resource mobilization

One of the main constraints to a scaled-up and accelerated implementation of newborn and child survival interventions is inadequate financial resource. There is also concern over the predictability and sustainability of funding from development partners. Therefore; there is a need for mobilization and commitment of significant and sustained financial resources in order to achieve the targets set in this strategic plan.

The major actions are:

- Share some of the priority investments from HC/HP to Primary Hospitals to ensure continuity of care and expand the availability of CEmONC and quality referral care for newborns & children.
- All woredas must have budget for emergency preparedness and response
- Prepare a budgeted plan to provide guidance for financial requirements and implementation of the strategy and continue advancing the One Plan and One Budget approach at all sector ministries, regional health bureaus and woreda health offices
- Mobilise additional funding for EPI, IMNCI, especially for ICCM & CBNC
- Develop program/project proposals to mobilize additional resources from development partners, private sectors, foundations and other sources for the implementation of the strategy

6.4.2 Human Resources for Health

The strategy depends on both short and long-term recruitment and training of skilled staff to meet the maternal, neonatal and child health care service needs of the country. All MNCH trainings must adhere to quality standards. Training institutions will have their representative included in the child survival technical committee at each appropriate level to ensure that they work within the framework of the National Newborn & Child Survival Strategic Plan. The partnership with the Ministry of Education and health training institutions needs to continue strengthened to ensure the comprehensiveness and quality of the pre-service education in MNCH.

As indicated in the national human resource strategy the pre-service medical education shall address the emerging shift in disease and disability burdens and service expansion with the context of sub-specialization. Medical and other training institutions shall thrive to produce sub-specialty taskforce in pediatrics, perinatal medicine, surgery, nursing, growth and development, dietetics and nutrition so that the problems of pediatrics disease conditions, neonatal conditions, congenital anomalies, perinatal conditions, surgical conditions, injuries, growth and development and behavioral conditions are addressed.

There is also a need for Continuous Professional Development (CPD) of MNCH providers. Rapid roll out of Continuing Professional Development and in-service training schemes will require forming a team of TOTs to cover a given region/woreda where they can plan and execute training courses for all key cadres within the region/woreda.

The major actions are:

- Expand capacity building and career structure for both rural and urban HEW
- Strengthen mechanisms to develop and retain high quality health care professionals (licensure, accreditation, and board certification), as rapid expansion of human resource for health strategy continues
- Support growth , development, and transformation along defined career paths
- Strengthen mechanisms for sustained human resource utilization, retention and performance
- Strengthen coordinated partnership with the MoE, partners and the private sector for robust human resource development
- Develop institutional capacity in MOH, Regional Health Bureaus, and related agencies to be responsive to changing economic, social, environmental, technical, and epidemiologic context
- Strengthen the Human Resources Information System (HRIS) for accurate planning

6.4.3 Logistics Management

Gap in logistics management is one of the constraints identified as bottleneck in the implementation of newborn and child survival programs because of delays, failure to supply vaccines, drugs, mosquito nets, etc. The various programs involved in maternal, neonatal and child health will have to undertake thorough quantification of their logistical needs and develop a robust procurement plan that takes into consideration lead time from order to delivery and the need for sufficient buffer stock. These should be done within the institutional framework and with institutional support from central logistics management unit. Quantification should also consider the logistical needs of community-level services.

Each intervention unit will ensure that woreda-level essential drug and supplies quantification and forecasting includes requirements for clinic days and home visits by HEWs and for emergency treatment. Equitable access by all woredas must be ensured. At community level,

the drugs kit of the HEW should be regularly restocked, taking into account the amount of drug issued, the amount used and the number of patients treated.

The main objective is to:

- Strengthened capacity for logistics management including adequate functioning of cold chain, supply of medical equipment, availability of transport for referral and supervision at all levels of health systems.
- Ensure availability of adequate supply commodities, supplies and drugs at all levels of healthcare delivery system.

The major actions are:

- Facilitate quantification, procurement and distribution of drugs, supplies and commodities and maintain sufficient levels of stock at all times;
- Monitor utilization and ordering of drugs at all levels of service provision;
- Orientate pharmacy technicians and health centers on logistics management
- Procure additional transportation and communication equipment and supplies.
- Local production of essential MNCH commodities
- Ensuring accountability for availing the essential commodities for women's and children's health as per the UN Commission requirements

6.5 Implementation of the Strategy

The strategy is contingent on the implementation of the Health Sector Transformation Plan (HSTP) and the overall National GTP II implementation plan. The strategy aims to ensure universal effective coverage of quality newborn and child health interventions through closing the existing gaps in realizing equitable access and use of services across regions and among different sections of communities.

Granted that things will progress according to the plan, by 2020, 100% of the population will have access to essential newborn and child health care with high quality essential health service and the population will be empowered to use the services availed. The strategy proposes close monitoring of the implementation of its interventions and their impact with frequent reviews of progress. This dynamic approach will permit timely corrective measures to be taken at local or national level as soon as they are needed. It will also allow for the introduction of new interventions as soon as practical procedures and innovations are made readily available.

6.5.1 Health care for the newborns and children in regions requiring equitable development and special population segments, including pastoralist and cross-border mobile communities

The context specific needs of communities in regions requiring equitable development and pastoralists areas make a one-size-fit-all approach challenging. The FMOH, with input from health development partners with suitable experiences and in collaboration with all concerned sectors, will support the development of relevant context specific service delivery strategies to reach communities in regions requiring equitable development with preventive, promotive and curative newborn and child health interventions at all levels of the health delivery system.

6.5.2 Public Private Partnership for implementation of the Newborn and Child Survival Strategy

The partnership between public and private sector should be strengthened, in line with the HSTP approach, through collaboration with the private sector on the expansion of health infrastructure, local production of pharmaceuticals, provision of health services, training of health professionals and mobilization of resources for the health sector and by collaborating with professional associations in reducing professional malpractices towards improving quality of health services for newborn and child survival.

6.5.3 Intersectoral and MultiSectoral Collaboration for implementation of the Newborn and Child Survival Strategy

Inter-sectoral collaborations should be practiced at different levels of the health system through the formal government institutions (such as regional and woreda councils) and health sector governance structures (such as CJSC, RJSC and WJSC) by practicing initiation of joint planning, implementation, monitoring and evaluation at all levels of the health system as it has been elaborated in various documents of MoH. Since health is an integral part of sustainable socio-economic development efforts, there should be a collaborative activity between different ministries, institutions, organizations and the MoH for the implementation newborn and child survival strategy.

7: PARTNERSHIPS, ROLES & RESPONSIBILITIES

A sustainable and long-term reduction in child mortality depends on complementary actions at different levels and by all key sectors. The health sector can produce rapid changes in childhood morbidity and mortality by addressing specific causes of illnesses and death. However, the health sector is not in a position to address underlying determinants of maternal and childhood mortality, such as: lack of education; low status of women in society; availability of transport and good road networks for referrals; adequate supply of food, safe drinking water, and power etc. Active cooperation and participation of other sectors is therefore needed to address these underlying determinants of child survival and development.

7.1 Partnerships for the Newborn and Child Survival in Ethiopia

Several local and international partners support the planning, implementation, monitoring and evaluation of maternal, newborn, child and adolescent health interventions in Ethiopia. Some of these partners include:-

1. UN agencies
2. Bilateral and Multi-lateral organizations
3. Local and international MNCH implementing partners.
4. Universities – particularly medical & health professional training institutions
5. Professional societies – Ethiopian Pediatric Society (EPS), Ethiopian Society of Obstetrics and Gynecology (ESOG), Ethiopian Public Health Association (EPHA), Ethiopian Nurse-midwives Association (ENMWA), Ethiopian Nurse Association (ENA), Ethiopian Pharmacists Association (EPA), Public Health Officers Association (PHOA), Ethiopian Medical Association (EMA), etc
6. Private sectors – pharmacies, private clinics, private Hospitals, individuals

Implementation of the strategy requires active involvement (partnership) of local and international partners, including private sector and NGOs, through participation, coordination and mobilization of resources. This calls for advancing the one plan, one budget and one report approach. Partners are expected to advocate for equitable access for evidence-based MNCH interventions, provide financial and technical support including monitoring and evaluation of implementation of high impact MNCH interventions.

The major actions of the national partnership are to:

- Hold major stakeholder meetings to harmonize operation and arrive at a common understanding on selected issues, including: (a) targets year by year; (b) time of key activities; and (c) allocation of resources, taking into consideration the funding gaps and intervention coverage levels;
- Develop and harmonize a coordinated framework for community and facility level approach to child survival and development
- Develop a common system for supervision, monitoring and reporting

- Form Technical Working Groups and Task Forces amongst partners as and when necessary to achieve a given task;
- Conduct bi-annual, quarterly and monthly Joint Program Reviews together with partners
- Ensure multisectoral coordination at Federal level
- Functionalize the coordinating committees in the Regional States

7.2 Roles and Responsibilities

Federal Ministry of Health

The FMOH takes the lead to:

- Provide policy guidance and institutionalization of high impact newborn & child survival interventions in the national health sector strategic and operational plans
- Advocate and mobilize more resources for improving maternal newborn & child survival
- Ensure universal coverage of key interventions with focus on equity and quality of services
- Overall coordination, planning, implementation, and monitoring & evaluation of MNCH services
- Improve health information system and local use of data for decision making
- Develop and update appropriate national guidelines and training packages on MNCH
- Build the managerial and clinical skills of program managers and providers to improve the quality of MNCH services
- Support the quality of health service graduates through institutionalization of key MNCH packages in the pre-service education curricula
- Support operational researches and periodic surveys on MNCH interventions
- Ensure all essential MNCH commodities are available in all health facilities & health posts
- Improve the quality of MNCH services at all levels of the health care system
- Support and monitor the coordination and implementation of child survival programs at sub-national levels
- Monitor and evaluate the progress of implementation of the national strategy

National Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCAH) and Nutrition Technical Working group

The national Reproductive, Maternal, Newborn, Child and Adolescent Health and Nutrition Technical Working Group will be chaired by the MCH and Nutrition directorate of FMOH. It will have the authority on policy and strategic matters and ensures ensure that all the programs at the national level, including the NGOs and partner projects supporting them abide by one plan for the implementation national HSTP strategy.

The key roles of the RMNCAH and Nutrition Technical Working Group will include

- Co-ordinate the planning of all programs – partners and national to be in line with the HSTP II
- Advocate for the adoption of RMNCAH and nutrition friendly policies and evidence based interventions
- Mobilize resources for RMNCAH and Nutrition interventions
- Support each sub technical working groups
- Monitor and evaluate the national implementation of the HSTP II

National Newborn and Child Survival Sub-Technical Working Group

The national Newborn and Child Survival Technical Working Group is chaired by the Child Health Team Leader of FMOH. It will have the authority to ensure that all the programs at the national level, including the NGOs and partner projects supporting them, develop, promote and abide by one plan for the implementation of the strategy.

The key roles of the national working group include:

- Coordinate the planning and implementation of all programs that relate to newborn & child health, in line with the revised national Child Survival Strategy
- Advocate for adoption of child friendly policies and evidence-based newborn & child survival interventions
- Mobilize more resources for newborn & child survival
- Develop, harmonize and disseminate technical and managerial guidelines for all aspects of newborn & child survival
- Support regional planning for child survival
- Support Regional problem-solving and planning for child survival in special population groups
- Monitor and evaluate the national implementation of the Strategy – including periodic reviews of the implementation of the Strategy

Regional RMNCAH & Nutrition Technical Working Group

The key roles of the regional working group include:

- Coordinate the planning and implementation of all newborn, child survival and nutrition interventions in the region in line with the revised National Newborn and Child Survival Strategy, MNH roadmap and Nutrition Program.
- Coordinate the inputs of partners and NGOs working on child survival & nutrition in the Region
- Disseminate technical and managerial guidelines on newborn, child survival & nutrition
- Ensure the availability of all essential equipment and supplies to health facilities within the region

- Make sure and recommend all health facilities are staffed with the required skill mixes and update their knowledge and skills regularly
- Develop approaches to meet the child survival needs of special population groups
- Collaborate with the Regional offices for Education, Water and Sanitation, agriculture and nutrition on activities relevant to Child Survival & nutrition
- Support Woreda Health Offices in planning for Child Survival and in reviewing progress and solving problems
- Monitor and evaluate the implementation of the child survival and nutrition programs, including periodic reviews

Woreda RMNCAH & Nutrition Committee

The key roles of the woreda working group include:

- Coordinate the planning, implementation, supervision and support of all child survival & nutrition activities in the Woreda
- Ensure that all newborn, child survival and nutrition interventions are incorporated in the annual operational plans of the woreda and implemented effectively
- Coordinate the inputs of partners and NGOs in the Woreda in the area of child survival and nutrition
- Improve care seeking behavior through community dialogue and the Health development Army (HDA) networks
- Establish linkage with other sector offices (education, water, sanitation, and agriculture) on activities relevant to Child Survival & nutrition
- Ensure adequate staffing of health facilities with appropriately qualified health workers
- Make sure that health facilities are provided all essential supplies and equipment and needed health care workers relevant to newborn and child survival
- Monitor and evaluate newborn and child survival & nutrition activities, including periodic reviews of implementation and problem solving.

Kebelle Health Development Team

The key roles of the Kebelle health development team in relation to newborn and child survival activities include:

- Coordinate all MNCH and nutrition activities in the kebele and ensure implementation through the 1-to-5 networks
- Identify beneficiaries' including pregnant mothers and under-five children in the catchment area
- Plan and monitor the implementation of key child survival and nutrition interventions aiming universal coverage for all beneficiaries' in the kebele
- Increase care seeking and effective utilization of preventive/promotive and basic curative services provided at the health post level

- Work with the 1-to-5 networks to improve water & sanitation coverage in the villages
- Facilitate referral of delivering mothers & very sick children to next level health facilities

Health Development Army

This is a network of women in which those who have adopted better health behavior through completing the 16 packages of HEP are networked to 5 other women who have not yet completed the 16 packages so that they can influence the later to practice a healthy life style. Five of such 1-to-5 networks of women form a women (health) development team with leadership comprising the leaders of the 1-to-5 networks.

- Use the family to increase the care seeking behavior of the community regarding MNCH
- Promote the available services delivered at the community and health facility level including iCCM, CBNC, skill birth etc
- Introduce new health cultures that significantly reduce the under five mortality like the kangaroo mother care.

Health Facilities (health Centers & Hospitals)

- Create awareness of newborn and child survival agenda for their staff
- Incorporate MNCH activities into their annual plans
- Improve quality of services in their facility
- Regularly update/build capacity of their staff on current practices
- Ensure availability of essential commodities & equipment
- Conduct regular MNCH death reviews
- Provide mentoring support for lower level health facilities

Health Training Institutions & Professional Associations

These include medical and allied professional training institutions, and professional association in the field of MNCH namely, the Ethiopian Pediatric Society (EPS), Ethiopian Society of Obstetrics and Gynecology (ESOG), Ethiopian Public Health Association (EPHA), Public Health Officers Association (PHOA), Ethiopian Nurse-midwives Association, Ethiopian Nurse Association, Ethiopian Pharmacists Association and etc.

In the Ethiopian context, the role of these institutions is more or less similar and their support focuses mainly in the following areas:

- Advocacy for the adoption of favorable health policies for mothers and children
- Advise the FMOH for adoption of evidence-based MNCH interventions
- Capacity building of health cadres through both pre-service and in-service trainings

- Develop and update national preventive/promotive and curative guidelines & training packages
- Provide supportive supervision and mentoring for quality improvement
- Support improvement of quality of MNCH services at all levels of the health care system
- Document best practices and conduct operational researches to guide implementation policy directions
- Conduct monitoring and evaluation of MNCH program implementation

8: MONITORING & EVALUATION

Successful implementation of the newborn and child survival strategy will rely on robust Monitoring and Evaluation system. Hence, Monitoring and evaluation will be an integral part of the strategy. Continuous monitoring of progresses and evaluations of outcome and impacts will provide an evidence-based decision for effective, efficient and synergistic implementation of programs. Moreover, it will be integrated into knowledge management efforts that will help document lessons and sharing of experiences both nationally and to international arena.

Building strong monitoring, evaluation and knowledge management system requires effective partnership and coordination among various departments within the FMOH and with local and international health development partners. In this regard, the National Newborn and Child survival Technical Working Group (NNCSTWG) under the chairpersonship of the FMOH should lead the coordination of partners involved in newborn and child health in Ethiopia. As some of the newborn and child health interventions are very much intertwined with maternal health interventions there should be strong integration of the partners working on newborn/child health and maternal health. In addition the NNCSTWG should work closely with the Policy planning directorate in the FMOH, EPHI, Universities and other agencies engaged in health researches to ensure there is regular measure of the progress made in the implementation of the strategy.

The newborn and child survival interventions adopted by the strategy (Table 1) and, selected indicators outlined for monitoring the progress of implementation of the strategy (Annex I) provide guidance for action and accountability at all levels within the health system. Existing routine HMIS system will be strengthened, as it will be the main source of data for routine tracking of performance of most of the interventions listed in the strategy. The MNCH scorecard will also be updated to reflect the new high impact interventions and used to track progress made by regional states and districts to track performance with emphasis on ensuring equity in access and use of high impact newborn and child survival interventions.

A set of high-priority indicators and operational targets will be objectively measured (**Annex I**) and used for monitoring and evaluation purposes, in order to understand the scale and outcomes of implementation; and used for evidence-based decisions.

The monitoring and evaluation of activities is broadly divided in two: regular performance tracking system and operations research, studies and evaluation.

8.1 Regular performance tracking system

Supervision will be essential at and between various levels of the health system, and especially for the success of programs. Frequent and regular supervision helps to identify problems early

on and take immediate remedial action. Therefore, all related programs should develop a common supervisory mechanism and supervisory checklist with attendant human resources and financial commitment to produce a sustainable supervisory mechanism for expanded access to interventions for maternal, newborn and child health.

Review meetings will be conducted on a regular bases at all levels of health system to review progresses. The review meeting will be held at the national, regional, Zonal, woreda and PHCU level at different time intervals. During these meetings, performance of plans and targets will be reviewed; opportunities, challenges and solutions will be identified; and successes, best practices and lessons learnt will be shared. The FMOH, RHBs, ZHD, WorHO and the PHCU will lead the organization of the review meetings at their respective levels.

Services and facilities should generate reliable routine data at various levels. The data should be primarily utilized by generating unit for local decision-making and passed to the next level without delay. To ensure quality control in M&E, an independent verification system will be established. The main mechanism to improve quality of data generated through routine HMIS will be use of the data for decision-making (program improvement). Effort will be made to improve data use for program improvement at different levels along with using independent data quality monitoring mechanisms (such as LQAS).

HMIS data will be used to fathom progresses of activities of those indicators that are tracked by the system on regular basis. Information not captured through HMIS will be tracked through building national data base system integrated from various sources including joint and regular supervision checklist, and performance review meetings and training databases.

8.2 Operations research, studies and evaluation.

Surveys/studies/supervision/reports will also be used to assess the progresses made in the implementation of the newborn and child survival interventions, outcomes and impacts of interventions.

The existing national surveys and evaluations that can be used to review the performance of the newborn and child survival strategy include EDHS, Ethiopia Service Provision Assessment (ESPA+) Annual SARA Surveys, Malaria indicator surveys, Immunization coverage surveys and other program specific studies such as ICCM and CBNC evaluations will be used to review progresses.

FMOH will also strengthen its partnership with local and international health research centers and universities to make use of the evidences they generate to inform the implementation of the strategy and triangulate the reports that come from the health system.

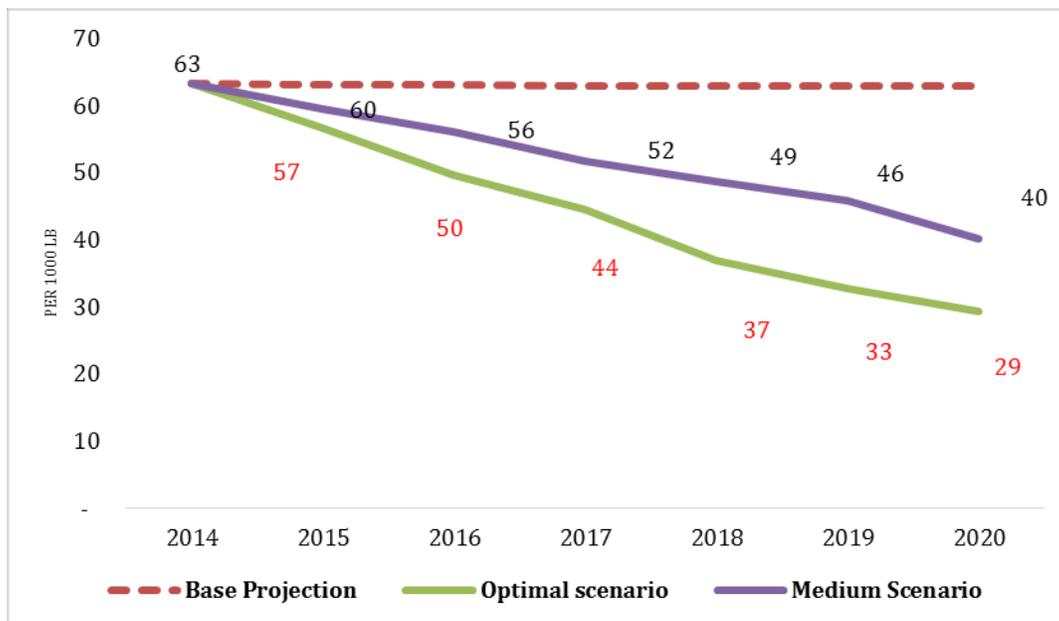
9: COSTING AND IMPACT ESTIMATION

The Lives Saved Tool (LiST) was used to compute the resource requirements and expected outcomes/impacts for implementing this newborn and child survival strategy. LiST is a child survival projection modeling tool that allows users to create short and medium term plans for scaling up essential health services. It is a bottom-up tool that allows for modeling based on population demographics, disease and health profiles, clinical practices, service provision and coverage. It helps to identify the resource requirements for building and maintaining the infrastructure, training, deploying and retaining the health workforce, availing medicines and supplies and other aspects of the health system management including equipment, logistics, health information and health financing. Prior to the costing, it was agreed to estimate the impact of the optimal and the medium scenario as described in previous sections. Optimal scenario assumes that most required resources are available and that acceleration towards universal health coverage (UHC) is possible. In medium scenario, there is an assumption that acceleration will not be possible and that objectives of optimal scenario will be met in 2025. The following table summarizes the results of the impact analysis for the two scenarios.

Table 4: Impact estimation by optimal and medium scenario of implementation

Scenarios	2015	2016	2017	2018	2019	2020
Base Projection						
Under five mortality rate (deaths per 1,000 live births)	63	63	63	63	63	63
Infant mortality rate (deaths per 1,000 live births)	44	44	44	44	44	44
Neonatal mortality rate (deaths per 1,000 live births)	28	28	28	28	28	28
Optimal scenario						
Under five mortality rate (deaths per 1,000 live births)	57	50	44	37	33	29
Infant mortality rate (deaths per 1,000 live births)	41	36	32	26	23	20
Neonatal mortality rate (deaths per 1,000 live births)	26	23	20	15	13	11
Medium Scenario						
Under five mortality rate (deaths per 1,000 live births)	60	56	52	49	46	40
Infant mortality rate (deaths per 1,000 live births)	44	41	38	36	34	29
Neonatal mortality rate (deaths per 1,000 live births)	28	27	24	23	22	18

As illustrated in the following graph, objectives set under the optimal scenario will allow Ethiopia reduce its under-five mortality level much faster from 63 per 1000 live births to 29 between 2015 and 2020, if all of the objectives set to increase access/coverage to achieving health and nutrition high impact interventions goals are met. The bulk of the lives saving comes from effective strategies to reduce newborn mortality rates by 63% (from 29 per 1000 live births in 2014 to 11).

Fig 9: Under-five mortality rate (deaths per 1,000 live births)

9.1 Costing methodology

For both scenarios, interventions are costed using the ingredients or bottom-up approach. Both total and incremental costs are calculated based on drugs and supplies costs. Besides estimates are provided from the staff time requirements linked to each intervention, including the number of visits (and hospital days where necessary) per average case. Other cost items such as training, IEC or supervision are also taken into account.

The following cost estimate is based on:

- The best accessed information on disease profiles
- Used official figures for base year population demographics
- Assumed that facilities are functioning
- Assumed that the minimum required staffs are in place
- National protocols and expert opinions are used for clinical practices
- Expansion targets are set to meet the standards as based on population figures and other set criteria
- Service coverage targets are set in line with the visioning exercise of achieving impacts that are comparable to middle income countries by 2025/35, in line with the national HSTP

N.B The cost included in this strategy excludes the Infrastructure, WASH, reproductive and maternal health and nutrition interventions that have impacts on survival and health of newborns and children but linking the target and costing to the specific programs is ensured.

9.3 Costing results

The following tables and graphic summarize the results from key resource estimations for newborn and child health programs. Under the optimal scenario, Ethiopia need to mobilize **US\$ 1.16 billion (ETB 23.2 billion)** in five year period to contribute to the saving of about **368,378 under-five deaths**, of which **167,597 are newborns**. In average, this scenario requires US\$ 1.99 (ETB 40) per capita per year and it is estimated that 60% of this amount should be spent on drug and supply, 32% on staff related, 7% in other recurrent cost, and 1% in capital costs.

Fig 10: Total Newborn and Child Survival Strategy budget per capita (USD)



Based on recent analysis from the National Health Account 2011, the total expenditure on child survival is around US\$ 2.49 per capita (12% of \$US 20.77 spent per child), of which about 48% came from the households, 25% from the Government and 27% from the rest of the world.

In the following medium scenario, Ethiopia need to mobilize **US\$ 1.06 billion (ETB 21.2 billion)** in five year period to contribute to the saving of about **229,967 under-five deaths**, of which

84,449 are newborns. In average, this scenario requires US\$ 1.80 (ETB 36) per capita annually and it is suggested that 60% of this amount should be spent on drug and supply, 32% on staff related, and 8% in other recurrent cost.

9.4 Limitations of current cost estimates

- Estimations were dependent on available data inputs, including unit costs, and may need further updating them with the latest available, with a potential for significant variations in associated costs
- Need additional analysis on potential source of funding for child survival and newborn programs
- There may be a need to adjust targets considering feasibility of implementation of some of the interventions and availability of financial space
- Impact of the newborn and child survival strategy was projected with the assumption that family planning, maternal health, nutrition, and other relevant sectors will perform to the optimum accordingly

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11: ANNEXES

ANNEX 1 - Intervention packages and selected indicators for monitoring the strategy

Continuum of care level	Interventions	Indicators	Data source	Timing	Baseline 2013/14	2020 targets
Pre-pregnancy	Family Planning	Contraceptive Prevalence Rate	DHS, HH surveys	5 yearly	42 %	55%
	Antenatal care	Proportion of pregnant women who received ANC 4+	DHS, HH surveys	5 yearly	32%	95%
Pregnancy	ITN for pregnant mother	Proportion of pregnant women who slept under ITN the previous night	DHS, Malaria Indicator survey	5 yearly 3 yearly	35 %	80%
	TT immunization for neonatal tetanus protection	Percentage of newborns protected against tetanus	DHS, EPI surveys	5 yearly	68 %	90%
	Prevention and treatment of iron deficiency anemia in pregnancy	Percentage of pregnant women who receive iron supplementation	DHS	5 yearly	34%	95%
	PMCT	Proportion of HIV+ pregnant women receiving complete ARV course	HMIS	Yearly	55 %	100%
	Supplementary feeding for malnourished pregnant and lactating women	Percentage of malnourished pregnant and lactating women receiving supplementary feeding	DHS, HH surveys	5 yearly	20%	80%
	Skilled delivery care	Proportion of births attended by skilled attendant (health personnel)	DHS, HH surveys	5 yearly	15 %	95%
Birth & Postnatal	Neonatal resuscitation	Proportion of newborns who were not breathing spontaneously/crying at birth for whom resuscitation (actions) WITH BAG AND MASK were initiated immediately	HMIS, surveys	Yearly	No data	90%
	Steroid for Preterm labor	Percentage of women with Preterm labor (<34 weeks of gestation) receive steroid	HMIS, surveys	Yearly	0 %	90%
	Management of PROM	Percentage Preterm prolonged rupture of membranes treated with antibiotics	HMIS	Yearly	10 %	90%
	Thermal care for the newborn: dried	Percentage of newborns dried after birth (<i>dried with dry cloth and wrapped with another dry one</i>)	Surveys, DHS	Yearly, 5 yearly	15%	95%
	Thermal care for the newborn: delayed bath	Percentage of newborns for whom bathing was delayed for at least 24 hours after birth	Surveys, DHS	Yearly, 5 yearly	15%	95%

Thermal care for the newborn: skin to skin contact	Percentage of newborns who were placed skin to skin on the mothers' abdomen or chest immediately after delivery	Surveys, DHS	Yearly, 5 yearly	15%	95%
Cord care for the newborn: clean cutting and tie	Percentage of newborns who have received cord care: <i>cut with clean instrument and tied with clean tie</i>	HMIS reports DHS/Surveys	Yearly 5 yearly	15%	95%
Cord care for the newborn: Chlorhexidine	Number of newborns that received at least one dose of CHX to the cord on the first day after birth	HMIS reports DHS/Surveys	Yearly 5 yearly	15%	90%
Early initiation of breast feeding	Proportion of newborn put to breast within an hour of birth	DHS, HH surveys	5 yearly	52 %	90%
Birth weight	Percentage of live births with a reported birth weight	DHS, HH surveys	5 yearly	5.2%	95%
Kangaroo mother care	Percentage of low birth weight and premature newborns for whom KMC was initiated	DHS, HH surveys	5 yearly	10%	80%
Postnatal care: for the mother	Proportion of mothers who received postnatal care within two days of birth	DHS, HH surveys	5 yearly	12% in 48 hours	50%
Postnatal care for the newborn	Proportion of newborns who received postnatal care within two days of birth	DHS, HH surveys	5 Yearly	12%	50%
Exclusive breastfeeding for children 0-6 months	Proportion of children exclusively breastfed for the first 6 months	DHS, HH surveys	5 yearly	52 %	80%
Continued breastfeeding for children 20 to 23 months	Proportion of children aged 20 to 23 months receiving breast milk.	DHS, HH surveys	5 yearly	82.2%	90%
Complementary feeding (minimum acceptable diet)	Proportion of children 6–23 months of age who receive a minimum acceptable diet	DHS, HH surveys	5 yearly	4 %	30%
ITN for under five children	Proportion of children<5 who slept under ITN the previous night	DHS, HH surveys	5 yearly	38%	80%
Indoor Residual Spraying (IRS)	Proportion of Households covered with IRS (in IRS targeted areas)	DHS, HH surveys	5 yearly	83.8 %	95%
Newborn sepsis management (severe bacterial infection)	% of newborns with severe bacterial infection managed with antibiotics at community level	HMIS, Surveys	Yearly	6%	80%
Community-based Pneumonia treatment for children	% children treated for pneumonia at community level	DHS, HH surveys	5 yearly	0 %	80%

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Infants & Children	Oral Rehydration Therapy	Proportion of diarrhea cases who received ORT	DHS, HH surveys	5 yearly	40%	90%
	ORS	Proportion of diarrhea cases treated with ORS	DHS, HH surveys	5 yearly	26%	90%
	Zinc for diarrhea management	Percentage of children with diarrhea who are treated with Zinc at community level	DHS, HH surveys	5 yearly	0.20 %	90%
	Antibiotic for dysentery	Proportion of children with dysentery who received antibiotics	DHS, HH surveys	5 yearly	14.4 %	80%
	Care seeking for fever treatment	Proportion of children with fever during last two weeks who had blood test at community level	DHS, HH surveys	5 yearly	25 %	80%
	Artemisinin-based Combination Therapy for children	% children under five with P. Falciparum in the last two weeks received ACT at community level	DHS, HH surveys	5 yearly	65 %	100%
	Malaria treatment with Chloroquine	% Children under five with P vivax in the last two weeks treated with chloroquine treatment	DHS, HH surveys	5 yearly	33 %	90%
	Management of complicated malaria	Proportion of complicated & severe malaria diagnosed & treated	HMIS	Yearly	30 %	90%
	Measles immunization	Proportion of children 12-23 months who received Measles vaccination	DHS, EPI coverage surveys	5 yearly	68 %	96%
	Pentavalent immunization	Proportion of children 12-23 months vaccinated for Penta 3	DHS, EPI coverage surveys	5 yearly	66 %	96%
	Fully Immunization	Proportion of children 12-23 months fully immunized	DHS, EPI coverage surveys	5 yearly	50 %	95%
	Rota immunization	Proportion of children 12-23 months vaccinated for Rota	DHS, EPI coverage surveys	5 yearly	0 %	96%
	Pneumococcal immunization	Proportion of children 12-23 months vaccinated for Pneumococcal	DHS, EPI coverage surveys	5 yearly	80 %	96%
	Vitamin-A	Percentage of children aged 6-59 months who received at least two doses of vitamin-A in the last 12 months	DHS, EPI coverage surveys	5 yearly	61 %	95%
Deworming	Percentage of children aged 2-5 years of age who dewormed at least two times in the last 12 months	DHS, HH surveys	5 yearly	19 %	96%	
ART for children with HIV/AIDS	Proportion of eligible children who are started on ART	HMIS	Yearly	9.5 %	80%	
DOTS for children	TB treatment success rate for children	HMIS	Yearly	--	95%	

Management of Severe Acute Malnutrition	% of children with SAM receiving therapeutic feeding	HMIS	Yearly	28 %	90%
	Proportion of households with access to safe water supply	DHS, HH surveys	5 yearly	55%	100%
Sanitation	Proportion of households practicing water treatment and safe storage at home	DHS, HH surveys	5 yearly	8%	93%
	Proportion of HH with access to latrine facilities	DHS, HH surveys	5 yearly	84 %	100%
	Proportion of households properly utilizing latrines	DHS, HH surveys	5 yearly	63 %	100%
Hand washing at critical time	Availability of running water at health facilities	SPA+	5 yearly		100%
	Availability of adequate and clean sanitation facility in health facilities	SPA+	5 yearly		100%
C- HIS	Proportion of mothers/care takers practicing hand washing with soap at critical time	DHS, HH surveys	5 yearly	13%	60%
	Proportion of HPs implementing C-HIS	DHS, HH surveys	5 yearly		100%
Birth Registration	Proportion of children whose birth is registered	DHS, HH surveys	5 yearly		80%

ANNEX 2 – Cost estimates by Intervention packages (Optimal Scenario in USD)

	2015/16	2016/17	2017/18	2018/19	2019/20	Total
Periconceptual						
Ectopic pregnancy case management	137,457.94	160,304.75	203,690.25	253,226.25	368,617.81	1,123,297.00
Pregnancy						
Routine						
TT - Tetanus toxoid vaccination	2,554,537.81	2,417,074.50	2,642,224.50	2,892,091.50	3,734,381.69	14,240,310.00
Syphilis detection and treatment	244,453.38	286,424.38	369,257.38	468,957.38	701,829.50	2,070,922.00
Childbirth						
Clean birth practices	3,283,879.44	3,291,200.19	3,761,321.19	4,279,263.19	5,731,249.00	20,346,913.01
Immediate assessment and stimulation	383,097.38	364,029.31	396,270.81	428,719.31	542,518.19	2,114,635.00
Neonatal resuscitation	4,646.94	4,821.38	5,691.38	6,701.38	9,336.94	31,198.00
Breastfeeding						
Promotion of breastfeeding	8,045,597.25	7,863,694.00	8,893,115.50	10,135,494.00	13,779,545.30	48,717,446.05
Preventive						
Postnatal care						
Clean postnatal practices	8,181,067.13	9,820,081.81	12,751,916.80	16,185,782.30	24,093,525.90	71,032,373.94
Chlorhexidine	452,123.00	651,339.81	905,718.31	891,158.81	995,933.06	3,896,273.00
Feeding and supplements						
Complementary feeding--	3,448,609.56	3,215,966.44	3,479,729.44	3,779,947.44	4,853,276.13	18,777,529.01

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education only									
WASH*									
Hand washing with soap	1,068,584.50	898,419.50	801,200.00	596,541.50	258,578.50			3,623,324.00	
Hygienic disposal of children's stools	1,941,767.81	1,592,735.31	1,442,515.81	1,180,018.31	857,693.75			7,014,730.99	
Other									
Other promotive interventions	357,690.13	354,920.00	403,741.00	458,945.50	616,374.38			2,191,671.00	
Vaccines									
BCG	2,161,394.44	1,918,314.50	1,970,286.00	2,014,305.50	2,395,903.56			10,460,204.00	
Polio	2,692,476.19	2,650,154.81	2,986,145.31	3,355,270.31	4,441,217.38			16,125,264.00	
Pentavalent	18,077,283.44	15,662,033.38	15,809,881.88	15,953,092.88	18,788,079.44			84,290,371.02	
Pneumococcal	40,405,790.90	36,280,278.60	37,763,306.60	39,245,032.10	47,698,218.80			201,392,627.00	
Rotavirus	10,922,860.10	11,456,022.40	13,365,067.90	15,303,967.90	20,409,168.80			71,457,087.10	
Measles	2,370,371.31	2,193,422.94	2,335,680.94	2,475,474.94	3,066,890.88			12,441,841.01	
Measles campagn	32,525,084.00	32,548,532.00	32,467,491.00	32,251,616.00	31,867,925.00			161,660,648.00	
Polio campagn	10,331,574.00	10,282,164.00	10,165,397.00	9,975,054.00	9,698,619.00			50,452,808.00	
MR vaccine	-	-	473,910.00	979,372.00	1,519,840.00			2,973,122.00	
Men A	-	-	1,087,027.00	2,213,425.00	3,380,621.00			6,681,073.00	
HPV	-	-	1,087,027.00	2,213,425.00	3,380,621.00			6,681,073.00	
IPV	-	-	254,620.00	538,225.00	855,109.00			1,647,954.00	
Hepatitis B birth dose	-	-	372,415.00	790,836.00	1,262,240.00			2,425,491.00	
Curative after birth									
Neonatal									

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Thermal care	585,446.69	553,393.25	605,051.75	662,958.25	857,600.06	3,264,450.00
KMC - Kangaroo mother care	541,664.38	511,354.81	554,977.31	600,319.81	761,850.69	2,970,167.00
Full supportive care for prematurity	51,200.88	49,384.81	54,512.81	59,841.31	76,986.19	291,926.00
Oral antibiotics	14,117.25	14,313.44	14,003.94	10,919.94	4,629.44	57,984.00
Injectable antibiotics	2,952,615.94	2,626,015.69	2,717,839.69	2,816,651.19	3,423,765.50	14,536,888.01
Full supportive care for sepsis/pneumonia	69,790.50	54,334.38	45,786.38	32,710.88	14,252.88	216,875.00
Diarrhea						
ORS - oral rehydration solution	10,276,212.06	10,428,092.63	12,093,540.13	14,034,376.13	19,322,402.06	66,154,623.01
Antibiotics - for treatment of dysentery	445,072.50	448,746.63	505,193.63	558,327.63	717,019.63	2,674,360.02
Zinc - for treatment of diarrhea	5,134,004.88	5,955,900.88	7,315,699.38	8,643,303.88	11,774,045.00	38,822,954.02
Other infectious diseases						
Oral antibiotics : case management of pneumonia in children	977,036.94	1,147,441.38	1,397,033.88	1,614,962.38	2,123,081.44	7,259,556.02
Vitamin A - for treatment of measles	600,206.31	488,719.25	463,534.25	435,840.25	468,465.94	2,456,766.00
Antimalarials - Artemisinin compounds for malaria	23,900,794.69	21,131,935.56	21,710,301.56	22,302,274.56	26,814,616.63	115,859,923.00
Therapeutic feeding - for	13,258,505.25	13,280,170.19	15,169,485.19	17,265,123.69	23,167,105.69	82,140,390.01

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severe wasting						
Total	208,397,014.89	200,601,736.90	218,841,607.89	237,903,553.39	294,833,135.15	1,160,577,048.23
<i>Per capita</i>	<i>1.51</i>	<i>1.62</i>	<i>1.72</i>	<i>2.03</i>	<i>2.33</i>	<i>1.99</i>