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CHILD HEALTH LEADERSHIP AND NETWORKS IN TANZANIA FROM 2000 TO THE PRESENT: COUNTRY PERSPECTIVES

CASE STUDY REPORT ANNEXES

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ANNEX A: DESK REVIEW

Country Perspectives on Child Health Leadership and Networks in Tanzania from 2000 to Present

TANZANIA CASE STUDY DESK REVIEW

JUNE 2018

CONTENTS (DESK REVIEW REPORT)

ACRONYMS LIST, DESK REVIEW REPORT

BRN	Big Results Now
CDC	Center for Disease Control
CHW	Community Health Worker
DHS	Demographic Health Survey
EBF	Exclusive Breast Feeding
EPI	Expanded Programme on Immunization
GFF	Global Financing Facility
GHI	Global Health Initiatives
GVAP	Global Vaccine Action Plan
HBB	Helping Babies Breathe
HSSP	Health Sector Strategic Plan
iCCM	Integrated Community Case Management
IMCI	Integrated Management of Childhood Illness
INSIST	Improving Newborn Survival in Southern Tanzania
MCH	Maternal and Child Health
MDG	Millennium Development
MMR	Maternal Mortality Ratio
MNAP	Multi-sectoral Nutrition Action Plan
MNCH	Maternal, Newborn and Child Health
MOH	Ministry of Health
MOHSW	Ministry of Health and Social Welfare
NCDs	Non-communicable diseases
NGO	Non-Governmental Organizations
NMR	Neonatal Mortality Rate
ORS	Oral Rehydration Salts
PEPFAR	President's Emergency Plan for AIDS Relief
PHC	Primary Health Care
PMI	President's Malaria Initiative
PMTCT	Prevention of Mother to Child HIV Transmission
PO-PSM	President's Office, Public Service Management
PORALG	President's Office Regional Administration and Local Government
PPP	Public-Private Partnership
RCHS	Reproductive and Child Health Services
RMNCAH	Reproductive, Maternal, Neonatal, Child, and Adolescent Health
SARA	Service Availability and Readiness Assessment
SDGs	Sustainable Development Goals
SWAp	Sector Wide Approach
U5MR	Under-5 Mortality Rate
WRA	White Ribbon Alliance

INTRODUCTION

Tanzania has experienced several decades of political stability with recent high-level attention to reproductive, maternal, neonatal, child, and adolescent health (RMNCAH) as signified by President Jakaya Kikwete co-chairing the UN Commission on Information and Accountability for the UN Secretary-General's Global Strategy for Women's and Children's Health in 2011. Countdown Case Studies concluded that Tanzania's progress on RMNCAH was mixed, with substantial advances in child survival but slower progress in maternal and newborn survival, and family planning [1]. The country achieved the fifth fastest reduction in under-5 mortality rate (U5MR) for the Countdown to 2015 countries, attaining the MDG 4 target with a U5MR of 54 deaths per 1000 live births in 2013. However, the targets for maternal and neonatal mortality were not met. In 2015, reduction in neonatal mortality accounted for 40% of deaths in children younger than 5 years, and the maternal mortality ratio (MMR) was 410 deaths per 100,000 live births. A study that analyzed reasons for progress in RMNCAH from 1990-2004 found that U5MR progress was related to increased health resources combined with a decentralized health system [2]. The conclusions from this and from the Countdown Case Study underscore that continued focus is needed on addressing unmet need for family planning, gaps in coverage and quality of care at birth (especially in rural areas) [1]. As the country looks towards 2030, there is an urgent need to continue and maintain the progress on child health and address the gaps in maternal and neonatal survival.

Table 1. Key Demographic Indicators, Tanzania, 2015

Total population	53,880,000
Total under-5 population	9,419,000
Population growth rate[1]	3.12%
Crude birth rate	39.8
Total fertility rate	5.24
Age-specific fertility rate (15-19 years)	122.7 (SSA average: 110.4; LIC: 106.3)

Source: United Nations, Department of Economic and Social Affairs, Population Division (2017)

EPIDEMIOLOGICAL AND DEMOGRAPHIC PROFILE OF THE COUNTRY

The United Republic of Tanzania is the largest country in the eastern Africa region spanning 945,000 km including mainland and the Zanzibar islands. In 2016, Tanzania's population was 50,733,262 and expected to reach over 56 million by the year 2020. The population is mostly young: 43.9% below the age of 15 years; 3.9% aged 65 years and over. Regions with a high proportion of the young population are also areas with high fertility rates that are above the national average of 5.4 children per women.

ECONOMIC AND DEVELOPMENT CONTEXT

Sound macroeconomic policies, market-oriented reforms and debt relief have ensured a positive environment for the country's steady economic growth. Tanzania's economy depends heavily on the service sector, particularly tourism, which accounts for nearly half of GDP. Agriculture accounts for nearly one-quarter of GDP, employing two-thirds of the work force.

At 7% in 2016, Tanzania's economy expanded quickly, putting it close to the top of the fastest growing economies in sub-Saharan Africa. Since coming to office in 2015, President Magufuli has reoriented

[1] Average annual rate of population change (%)

public expenditure toward development spending, reducing recurrent expenditure significantly, and intensifying efforts to mobilize domestic revenue.[2] Government spending overall was cut back, and a cap put in place on the salaries of executive officers. Measures were introduced to control tax exemptions. At 5.2%, the inflation rate has remained low and close to the government's medium-term target of 5%.

The poverty rate fell from 60% in 2007 to 47% in 2016. Approximately 12 million Tanzanians still live in extreme poverty (based on the US$1.90 per day global poverty line) surviving on earnings of less than US$0.60 per day (World Bank, 2018). The majority (over 80%) of the poor and the extreme poor live in the rural areas [3]. More than half of the rural poor depend on subsistence agriculture for their livelihoods.

POLITICAL CONTEXT

Tanzania gained its independence in 1961 (Tanganyika since 1961 and Zanzibar since 1963), and in 1964 the two countries merged to form the United Republic of Tanzania. Julius Nyerere became president of the new republic, and his post-independence Arusha Declaration in 1967 laid the foundations for Tanzania's national development based on egalitarianism, socialism and self-reliance. Tanzania continued to be a one-party state until political reforms which brought in multi-party political elections in 1995 [4].

The country is organized into 30 administrative regions; the president is elected directly, together with the national assembly. The last election was held in 2015. In October 2015, John Pombe Magufuli, was elected the fifth president of the United Republic of Tanzania, ushering in a period of political change.

CHILD HEALTH OUTCOMES

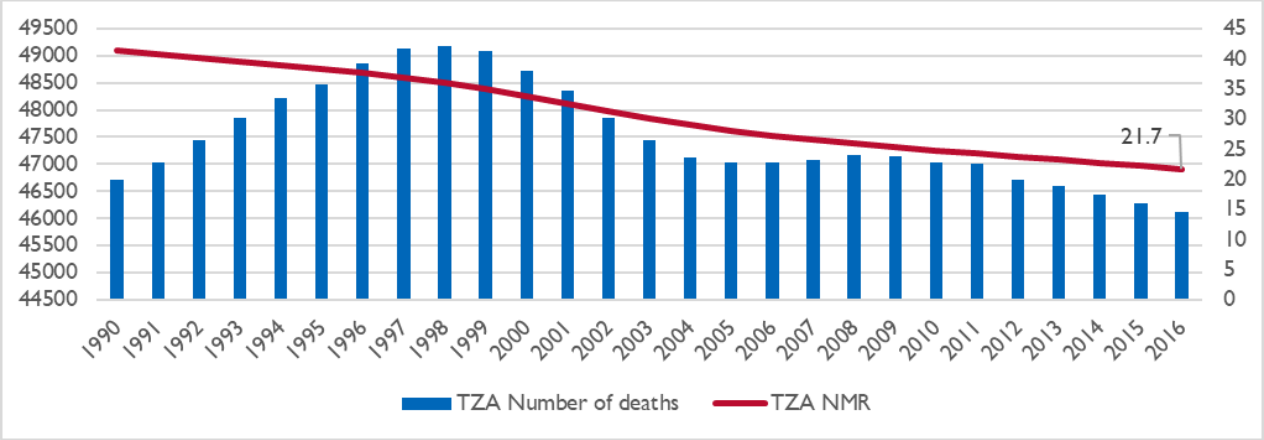
Reductions in maternal, newborn, and child mortality accelerated during the Millennium Development Goals (MDG) era, especially since 2000, most notably for U5MR [1]. Two main studies analyze trends and outcomes of child survival in Tanzania from the period of 1999 - 2004 [2] and 2000 - 2012 [1].

NEONATAL MORTALITY

Between 2000 and 2012, neonatal mortality decreased at a substantially slower rate than under-5 mortality, at half the annual rate of reduction (ARR=4.3) and reached 21 deaths per 1000 live births by 2012 [1]. By 2016, neonatal mortality was 21.7 deaths per 1000 live births (Figure 1). The Sustainable Development Goal (SDG) target is to reach 12 deaths per 1000 live births by 2030 (25,500 deaths).

[2] http://www.worldbank.org/en/country/tanzania/overview#1

Figure 1. Trends in Neonatal Mortality Rate and Neonatal Deaths, Tanzania, 1990 – 2016



Source: UN Inter-agency Group for Child Mortality Estimation, 2017 (http://data.unicef.org)

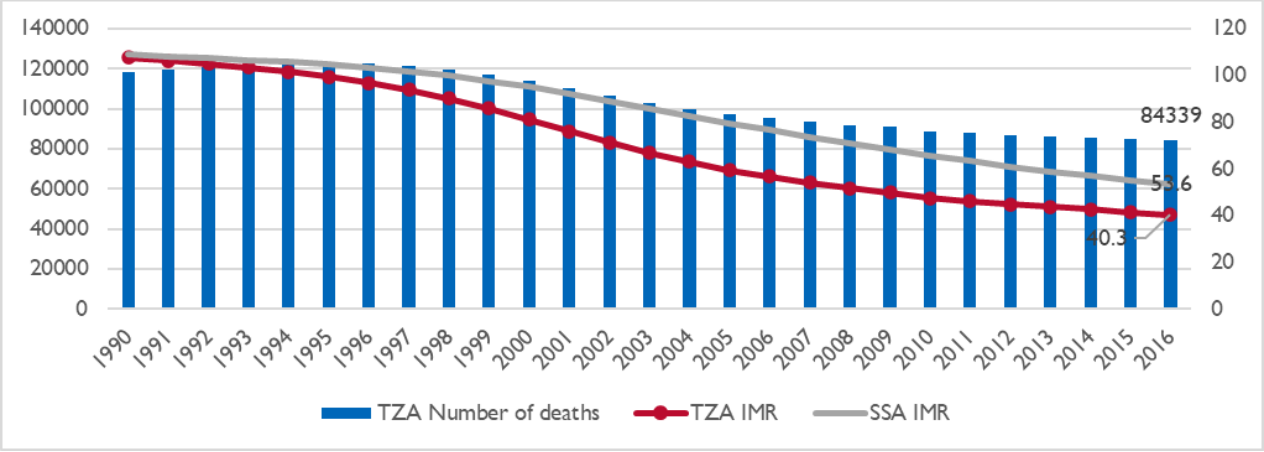
STILLBIRTHS

There is poor progress in stillbirths with around 47,550 stillbirths per year, of which 47% are intrapartum (a sensitive indicator of poor quality care at birth).

INFANT MORTALITY

Figure 2 shows the trends in deaths among infants under 1 year. The infant mortality rate in 2016 was 40.3 deaths per 1000 live births (84,339 deaths).

Figure 2. Trends in Infant Mortality Rate and Infant deaths, Tanzania, 1990 - 2016



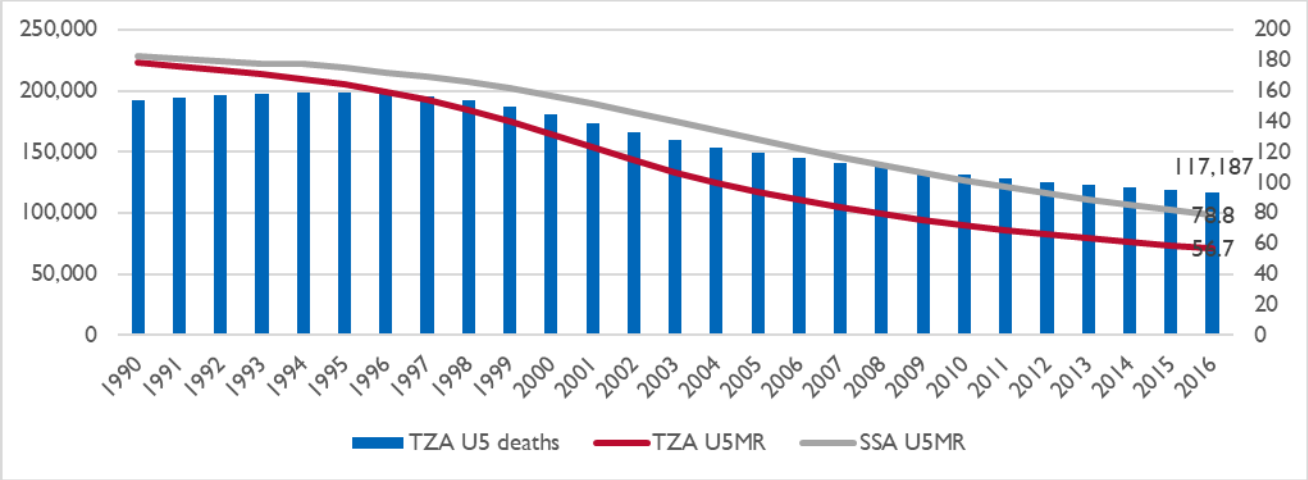
Source: UN Inter-agency Group for Child Mortality Estimation, 2017 (http://data.unicef.org)

UNDER-5 MORTALITY

Tanzania met the MDG 4 target through substantial reduction in mortality for children aged 1-59 months, with an annual rate of reduction of 8.5% from 2000-2012 [1]. The U5MR in 2016 reached 56.7 per 1000 live births (Figure 3). There were approximately 117,187 deaths among this age group. However, the rate of decline appears to be lower than the period leading up to 2015, and if the SDG

target of 14 per 1000 live births (37,400 deaths) is to be met, then efforts must be maintained to continue the decline in under-5 mortality.

Figure 3. Trends in U5MR and U5 Deaths, Tanzania, 1990 – 2016



Source: UN Inter-agency Group for Child Mortality Estimation, 2017 (http://data.unicef.org)

DISPARITIES

Under-5 mortality is highest among infants, boys, children of uneducated mothers, children of youngest and oldest mothers, and children from relatively poor households [5]. A study in rural Tanzania showed that the children living in the poorest households had a risk of dying that was 1.28 times greater than children in richest households. In the period 2001-2011, **disparities by maternal education attainment narrowed over time while those between the poorest and richest worsened in rural areas of Tanzania**. Improved child survival therefore does not necessarily indicate improved equity. The authors conclude that there is a need for policies and programs that both reduce child mortality and address socioeconomic disparities.

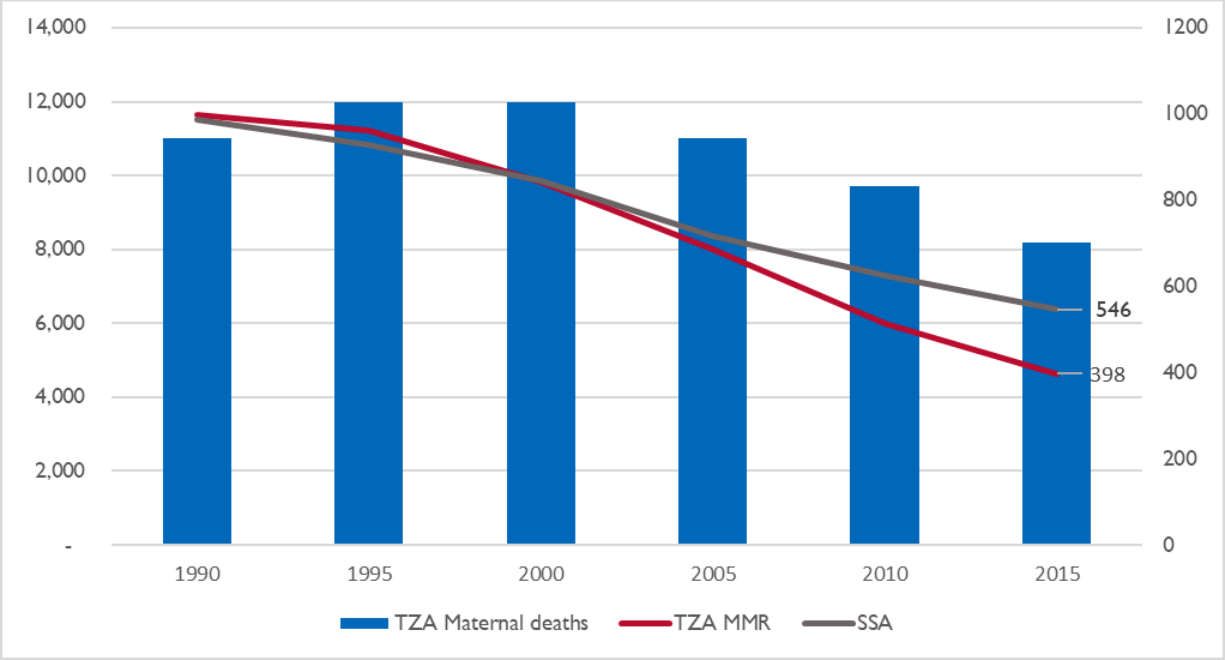
FORWARD-LOOKING PROJECTIONS

The Countdown Case Study of Tanzania concluded that projections to 2030 indicate that if present trends continue, Tanzania could achieve child and possibly also neonatal targets in A Promised Renewed and Every Newborn Action Plan [1].

MATERNAL MORTALITY

Tanzania has had less success in meeting maternal mortality targets, and not sufficient progress was made to meet MDG 5. In period 1990-2013, the annual rate of reduction was 3.4%; and 4.7% by 2012 (still below the 5.5% required to reach MDG 5). In 2015, MMR was 398 deaths per 100,000 live births (Figure 4). According to the Countdown case study, Tanzania is also not likely to reach the 2030 target of 140 maternal deaths per 100,000 live births [1].

Figure 4. Trends in Maternal Mortality Ratio and Deaths, Tanzania, 1990 – 2015

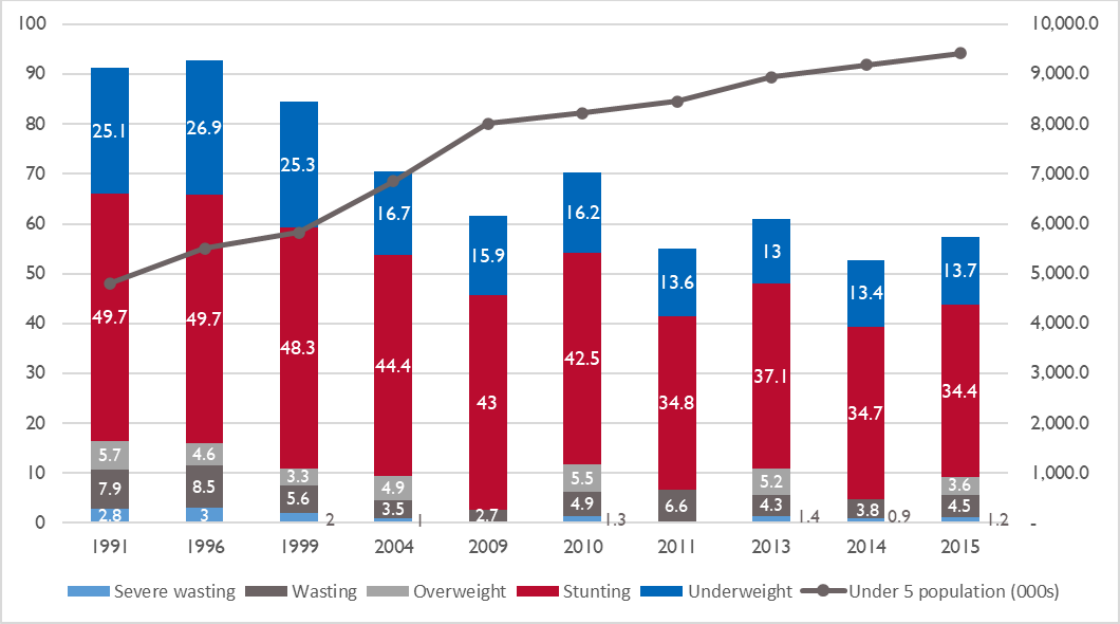


Source: WHO, UNICEF, UNFPA, World Bank Group and UNDP (MMEIG) - November 2015

MALNUTRITION

Figure 5 presents indicators of malnutrition for children under 5 years of age from 1991 through 2015. While there was an overall downward trend in the proportion of children stunted and underweight, there was a stagnation since 2011 where stunting remained around 34% and underweight at 13%. The proportion of children with extreme malnutrition, that is, wasting and severe wasting, was less than 10% in 1999. Subsequent years (post-2000) have shown fluctuating rates ranging from a low of 2.7% in 2009 to highs of 5.7% both in 2013 and 2015. This irregular pattern may be more a function of having a small sample size and the difficulty in establishing stable estimates when the prevalence is on a low side. However, the low prevalence, given the increase in the size of the under-5 population, still translates into a lot of unnecessary illness and risk for death.

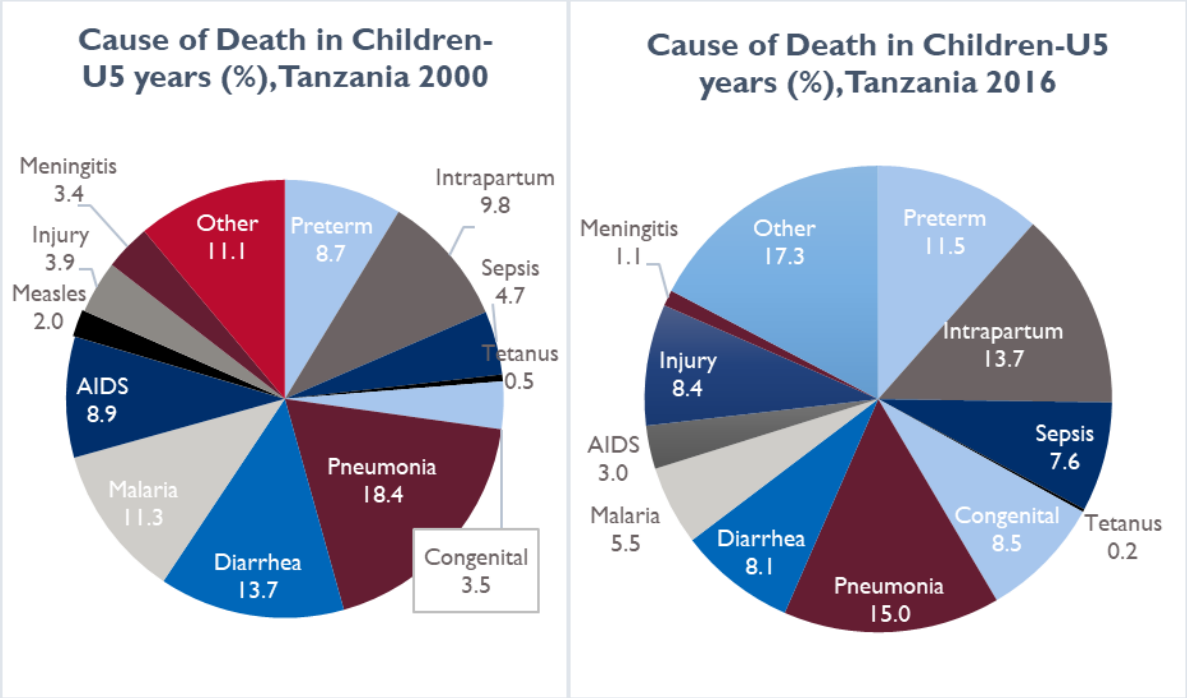
Figure 5. Child Malnutrition Estimates, Tanzania



Source: MICS (http://data.unicef.org)

CAUSES OF DEATH

Figure 6. Cause of Death in Children Under 5, Tanzania 2000 & 2016



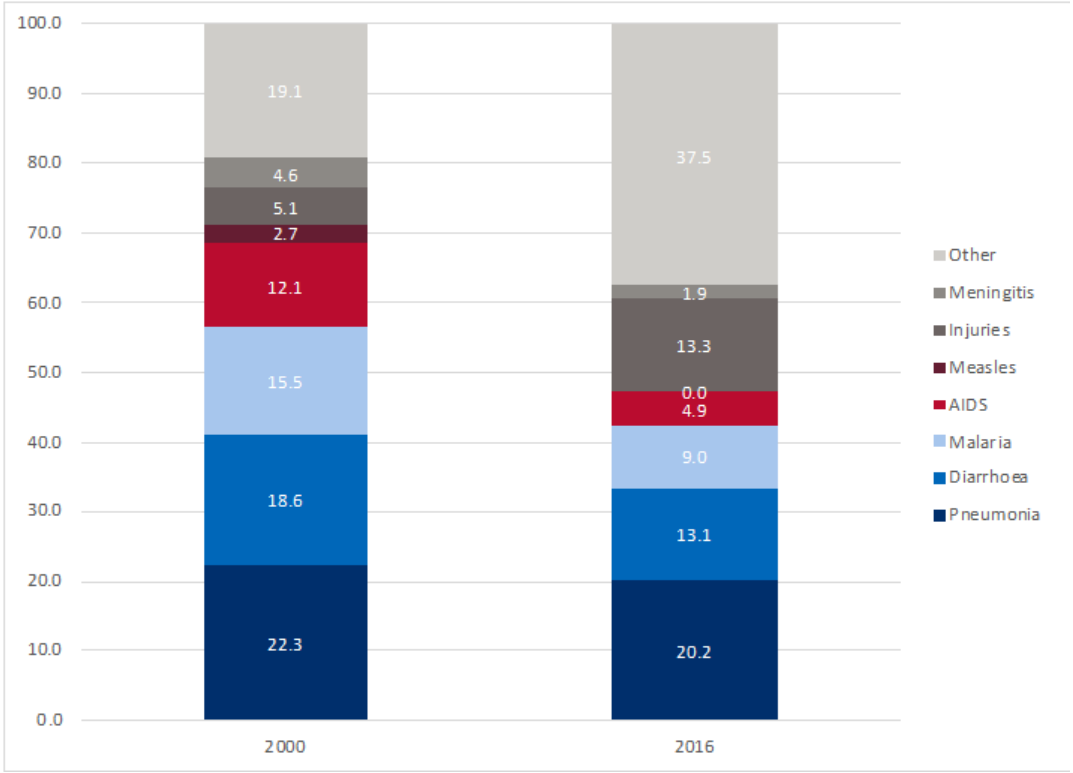
Source: WHO and Maternal and Child Epidemiology Estimation Group (MCEE), 2017 (http://data.unicef.org)

Among all children under 5, infectious diseases declined from 58.2% in 2000 to 32.9% in 2016 (Figure 6). There was a reduction in all individual infectious diseases while injuries doubled from 3.9% to 8.4% during this time period. Conditions causing neonatal mortality such as preterm births, intrapartum complications, congenital abnormalities, sepsis, and other conditions have increased as causes of deaths between 2000 and 2016. Pneumonia continues to be the leading cause of death for this age group (15%).

In children 1-59 months (Figure 7), the main causes of death from childhood infections in 2000 accounted for over 72.8% of deaths but sharply declined to 49.1% by 2016. Among infections, pneumonia continues to be the most persistent, accounting for close to 20.2% of deaths in 2016 (declining from 22.3% in 2000). Causes of death from injuries tripled (3.9% of deaths in 2000 to over 13% in 2016). As infectious diseases declined, the "other" death category reached a high of 37.5% suggesting that deaths from non-communicable diseases are becoming an important factor in causing death during the post-neonatal period.

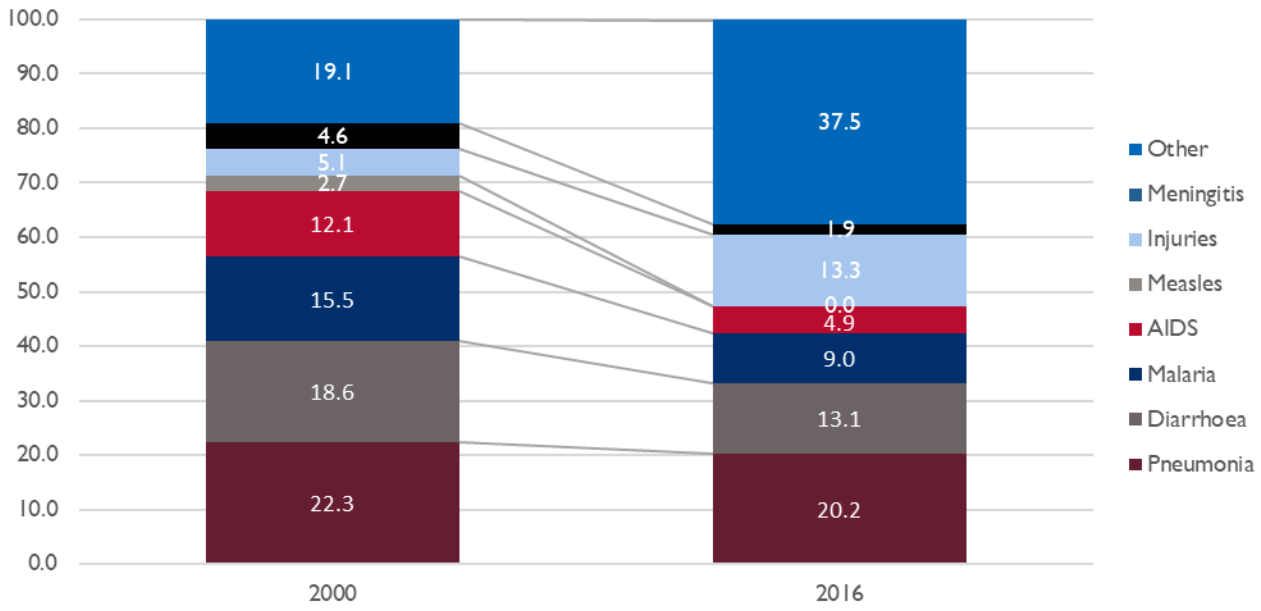
In neonates (Figure 7a), causes of mortality included intrapartum-related events (birth asphyxia: 31%); preterm complications (24%); and sepsis (19%). These three conditions account for three quarters of newborn deaths without much change between 2000 and 2016. Sepsis accounted for approximately 19% of newborn deaths, which is an increase from 17% in 2000. More than 80% of neonatal deaths occur in low birthweight, mainly preterm babies.

Figure 7. Cause of Death in Children 1-59 Months (%), Tanzania 2000 & 2016



Source: WHO and Maternal and Child Epidemiology Estimation Group (MCEE), 2017 (http://data.unicef.org)

Figure 7a. Cause of Death in Newborns (%), Tanzania 2000 & 2016



Source: WHO and Maternal and Child Epidemiology Estimation Group (MCEE), 2017 (http://data.unicef.org)

While there are no population-based estimates for maternal cause of death in the country, WHO estimates and demographic health surveys are often used. WHO regional estimates show that direct obstetric conditions are a key culprit, with hemorrhage and hypertensive disorders accounting for more than a 1/3 of deaths. The One Plan reports that "in Tanzania, nearly 70% of maternal deaths are caused by five direct obstetric causes: hemorrhage, eclampsia, sepsis, abortion complications and obstructed labor. In 2012, direct obstetric causes contributed to 63% of maternal deaths in Tanzania, while indirect causes contributed to 25% (HMIS, 2012)."[6]

A recent study in Tanzania's Pwani Region found a high prevalence of hypertension (26.7%) among a cohort of postpartum women, and despite the frequent contact with the health system (99.5% reported contact with the health systems during pregnancy and delivery), awareness, treatment, and control of hypertension was low [7]. This represents a missed opportunity to improve women's health during antenatal and postnatal care.

There is evidence to support the direct and indirect causes that lead to adverse maternal and child health outcomes. WHO recommends a minimum interval of 33 months between two consecutive live births to reduce the risk of adverse maternal and child health outcomes. Evidence from the rural district of Rufiji showed that close to half (48.4%) of inter-birth intervals over a follow-up period of 11 years was below the WHO recommended minimum length, and non-adherence was associated with younger maternal age, low maternal education, multiple births from the preceding pregnancy, non-health facility delivery of the preceding birth, being an in-migrant resident, multi-parity, and being married [8]. The authors suggest that being married provides more of an opportunity for childbearing due to higher frequency of sexual intercourse and low contraception use in Tanzania among married women, while unmarried women's pregnancies are more "unplanned" and therefore their inter-birth intervals may be longer. This suggests the importance of emphasizing birth spacing education in community and health facility-based programs, particularly in rural settings.

Mother's age is an important risk factor for child survival, particularly among neonates. Approximately 44% of women in rural parts of Tanzania have given birth before the age of 18 [9]. A study describing the factors associated with neonatal survival in parts of Kilombero and Ulanga districts (rural areas in Tanzania) found the neonatal mortality rate to be 32 per 1000 live births, with increased risk of mortality among neonates born to younger mothers aged 13-19 years compared to those 20 years and older, if they were in second birth order, and if their mothers had no partner co-resident in the household [10]. They also found that short-birth interval was associated with increased risk of neonatal mortality, and that male born neonates were at increased risk of mortality. The authors recommend delaying the age of first birth as a valuable strategy to promote and improve neonatal health and survival. Prioritizing girls' formal education and economic empowerment strategies may be worthwhile measures toward reducing adolescent pregnancy and ultimately improving neonatal survival.

COVERAGE OF KEY INTERVENTIONS

This section reviews the coverage and trends in some of the key interventions along the RMNCAH continuum of care. We start first with key coverage interventions on reproductive and maternal health, delivery, newborn care, immunization, and Vitamin A supplementation. This is followed by care-seeking indicators for infections including pneumonia, diarrhea, and malaria. Finally, we discuss nutrition coverage including indicators on complementary feeding (minimum acceptable diet, minimum diet diversity, and minimum diet frequency). Data were compiled from available Demographic Health Surveys (DHS) (including the latest 2016 survey) and indicators reported in the Tanzania Countdown Case Study.

INTERVENTIONS ALONG THE CONTINUUM OF CARE

REPRODUCTIVE AND MATERNAL HEALTH

Coverage remains low for the proportion of demand for family planning satisfied by modern contraceptives methods although it has increased slightly from 2010 (46% in 2010 and 52.9% in 2016). As reported in the Countdown case study, there are large disparities in by socioeconomic status [1].

DELIVERY

For care around delivery and birth, while over 90% of women attend at least one antenatal care visit, only half of pregnant women attend the recommended four or more antenatal care visits. Coverage decreased substantially in 2010 (43%) but it increased to 51% in 2016. The differences between the almost universal access to at least one antenatal care coverage and more visits suggests quality of care constraints and a missed opportunity for care continuity.

In 2016, 63% of women gave birth in a health facility (up from 50% in 2010), and 63.5% of women gave birth with the assistance of a skilled provider. However, there are large inequities by socioeconomic status [1]. In the same year, 34% of women received postnatal care within two days of care, which is very low and nearly the same as in 2010 (31%).

NEWBORN CARE

In 2016, the prevalence of early initiation of breastfeeding, defined as children born in the last two years that were put to the breast within one hour of birth, was 51.3%, which was up from its low of 41% in 2010 but not up to 2005 levels of 57%. Exclusive breastfeeding has steadily increased in coverage, reaching 59% in 2016.

IMMUNIZATION

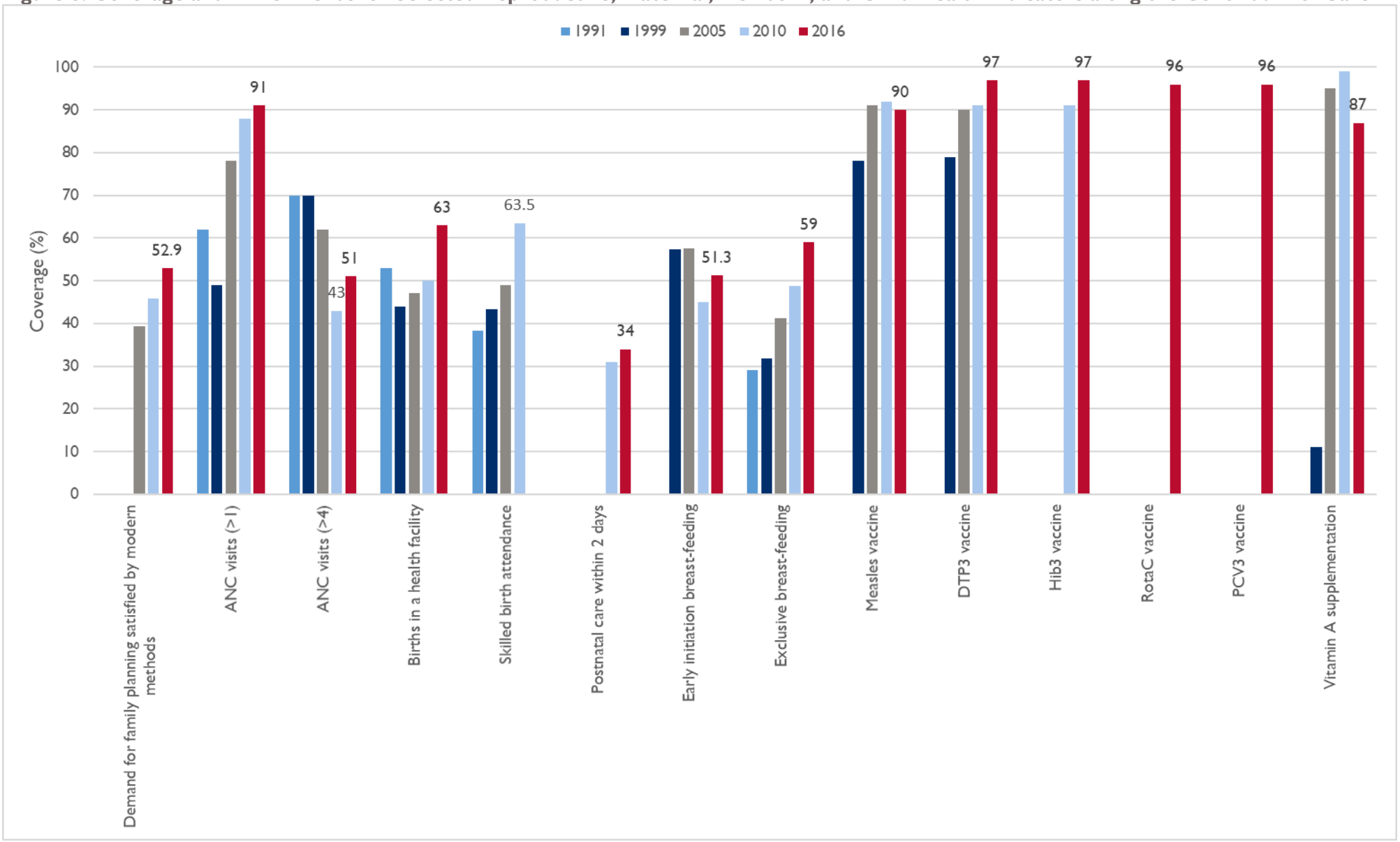
Routine immunization coverage by antigen by the time of the survey (according to vaccination card and history) was 90% for measles and 97% for DTp-Hib-HpB3. Rota and Pneumococcal (PCV 13) was more recently introduced and had 96% national coverage in 2016. Measles second dose and Rubella as MR, and Human Papilloma Virus (HPV) vaccines have also been introduced.

VITAMIN A SUPPLEMENTATION

While coverage for Vitamin A supplementation increased rapidly through 2010, coverage declined in 2016 to 87%.

Figure 8 shows the key indicators along the continuum of care.

Figure 8. Coverage and Time Trends for Selected Reproductive, Maternal, Newborn, and Child Health Indicators along the Continuum of Care

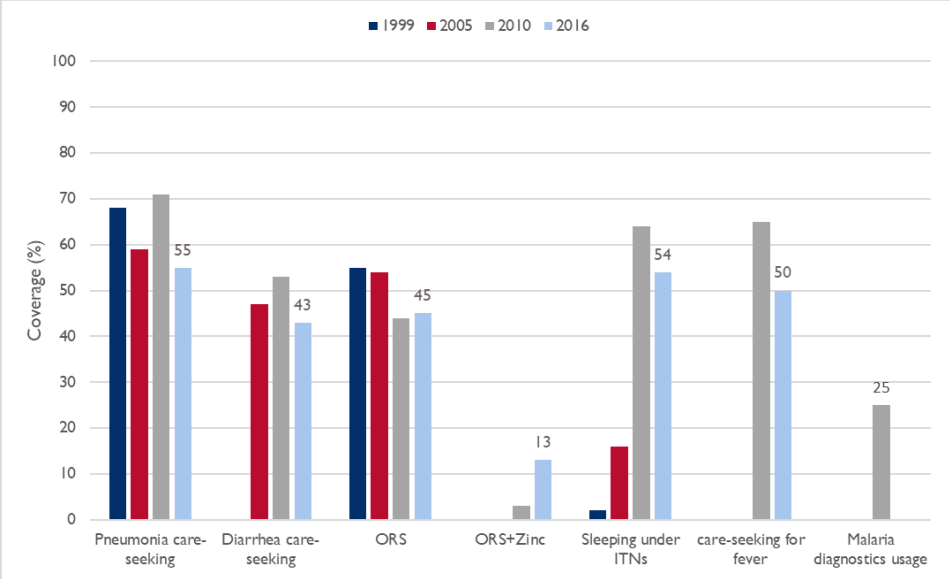


Source: DHS (http://data.unicef.org)

CARE-SEEKING FOR PNEUMONIA, DIARRHEA AND MALARIA

There are declines in care-seeking coverage for infections in 2016. Pneumonia care-seeking, defined as the proportion of children under 5 with pneumonia symptoms[3] who are taken to a health provider, declined in 2016 to 55% from a little over 70% in 2010. According to WHO/UNICEF guidelines, only those classified by a health worker as having pneumonia should receive antibiotic treatment. In Tanzania, 65% of health facilities carried amoxicillin and 73% carried co-trimoxazole in 2015.[4] Diarrhea care seeking coverage was at 43% in 2016, down from 53% in 2010. Children under 5 with diarrhea receiving oral rehydration salts (ORS packets or pre-packaged ORS fluids) was at 45% in 2016 – having not changed much since 2010, and a substantial decrease in coverage from 2005. Although increasing from previous years, coverage of ORS plus zinc is very low (13%). Coverage for malaria interventions also saw declines in 2016 compared to previous years. Only 54% of children under 5 were sleeping under insecticide treated bed nets (compared to 64% in 2010), advice or treatment was sought for only 50% of children under 5 with fever in the last two weeks (down from 65% in 2010); and only 25% of children under 5 with a fever in the last two weeks were clinically diagnosed for malaria (using finger or heel stick).

Figure 9. Coverage and Trends for Care-Seeking for Pneumonia, Diarrhea and Malaria

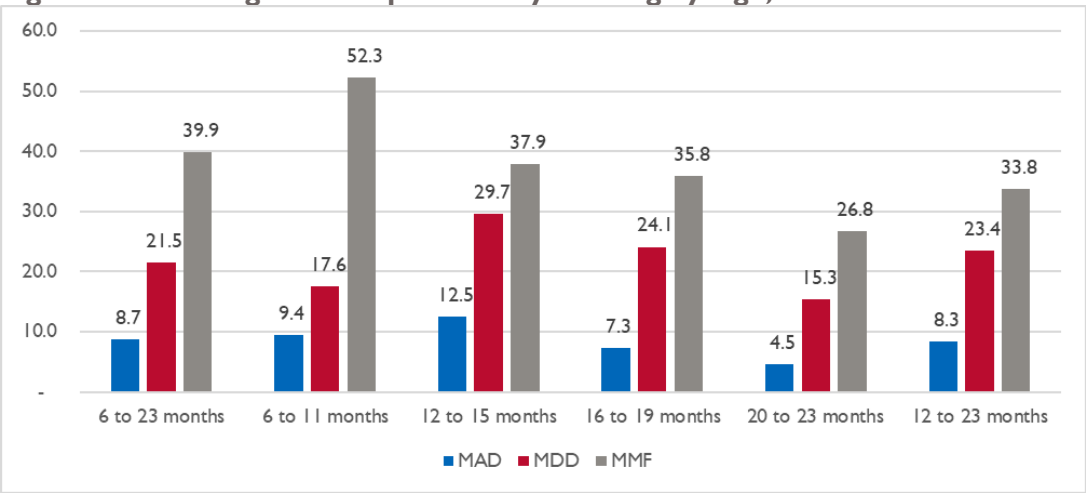


Source: DHS (http://data.unicef.org)

[3] The definition of pneumonia in measuring this indicator is quite broad, as stated on the UNICEF website (https://data.unicef.org/topic/child-health/pneumonia/): "Signs of pneumonia are a combination of respiratory symptoms, including 'cough and fast or difficult breathing due to a chest-related problem'. Children exhibiting such symptoms should be taken to a health provider for a clinical assessment for pneumonia. Not all children with symptoms of pneumonia should receive antibiotic treatment; only children with a confirmed case of pneumonia (classified as such by the Integrated Management of Child Illness guidelines and based on a rapid respiratory rate counted by a health worker) should receive them. Current pneumonia-related interventions at the population level are measured through household surveys. However, evidence indicates that it is not possible to measure pneumonia prevalence among children under age 5 during a household survey interview or to ascertain underlying pneumonia for children with these respiratory symptoms."

[4] Data from Service Provision Assessment (SPA) and Service Availability and Readiness Assessment (SARA) surveys (https://data.unicef.org/topic/child-health/pneumonia/#)

Figure 10. Coverage of Complementary Feeding by Age, Tanzania 2016



Source: DHS (http://data.unicef.org)

In 2016, of all children aged 6-23 months, the prevalence of minimum acceptable diet, minimum diet diversity, and minimum meal frequency was 8.7%, 21.5%, and 39.9% respectively, which are declines in the first two indicators from previous levels. A study also using DHS data reported prevalence in 2010 as 15.9%, 38.2%, and 38.6% respectively [11]. They found that the prevalence of the introduction of soft, semi-solid or solid foods among infants aged 6–8 months was high at 92.3%, although it did not meet the minimum daily requirements for a healthy diet. As presented in Figure 8, exclusive breastfeeding of infants less than 6 months of age has been steadily rising to 59% in 2016. However, 41% are still fed inappropriate solid foods. Results from multivariate analyses indicated that the main risk factors for inappropriate complementary feeding practices in Tanzania include young child's age (6–11 months), lower level of paternal/maternal education, limited access to mass media, lack of post-natal check-ups, and poor economic status. Thus, complementary feeding practices in Tanzania are not adequately met, and there is a need for interventions to improve the nutritional status of children under 5.

Another study in Tanzania to examine the association between complementary feeding and diarrhea found that the prevalence of diarrhea was lower among infants whose mothers engaged in exclusive breastfeeding (EBF) and predominant breastfeeding practices [12]. Prevalence of diarrhea was higher in infants between 6-8 months who received complementary foods, compared to those of the same age that were EBF – they were three times as likely to experience diarrhea. These findings are consistent with findings in other sub-Saharan African countries. EBF limits the infant's exposure to contaminated foods and breastmilk has a protective effect and benefits on micro-organisms.

In Tanzania, maize is the most commonly used complementary food, and maize-based foods have a high concentration of fumonisin, which causes diarrhea [13]. Strategies have been suggested to "dehulling" of maize to reduce fumonisin content or replacing maize with alternatives such as sorghum or finger millet. These strategies have proven difficult to implement [13].

POLICIES, PROGRAMS AND STRATEGIES

Tanzania began its intense focus on health sector reform policies in the mid-1990s following the severe economic crisis in the 1980s. The key components of those reforms included the decentralization of decision-making power and authority; introduction of user fees in public health care provision; and public-private partnerships in service delivery [14]. These reforms and in particular the decentralization of health systems have been linked to Tanzania's dramatic declines in child mortality leading up to 2015 [15]. In this section, we review the macro-level, health-sector level, and RMNCAH policies and strategies and their evolution, aims, and impact.

MACRO-LEVEL ECONOMIC AND DEVELOPMENT POLICIES

In 2013, the government of Tanzania launched the multi-sector development strategy to guide its quest to reach middle-income country status during the next decade. Modeled on the Malaysian development plan called "The Big Fast Results Initiative," the Tanzania program initially focused on six priority areas: energy and natural gas; agriculture; water; education; transportation; and mobilization of resources. In October 2014, health was added as a seventh area of emphasis.

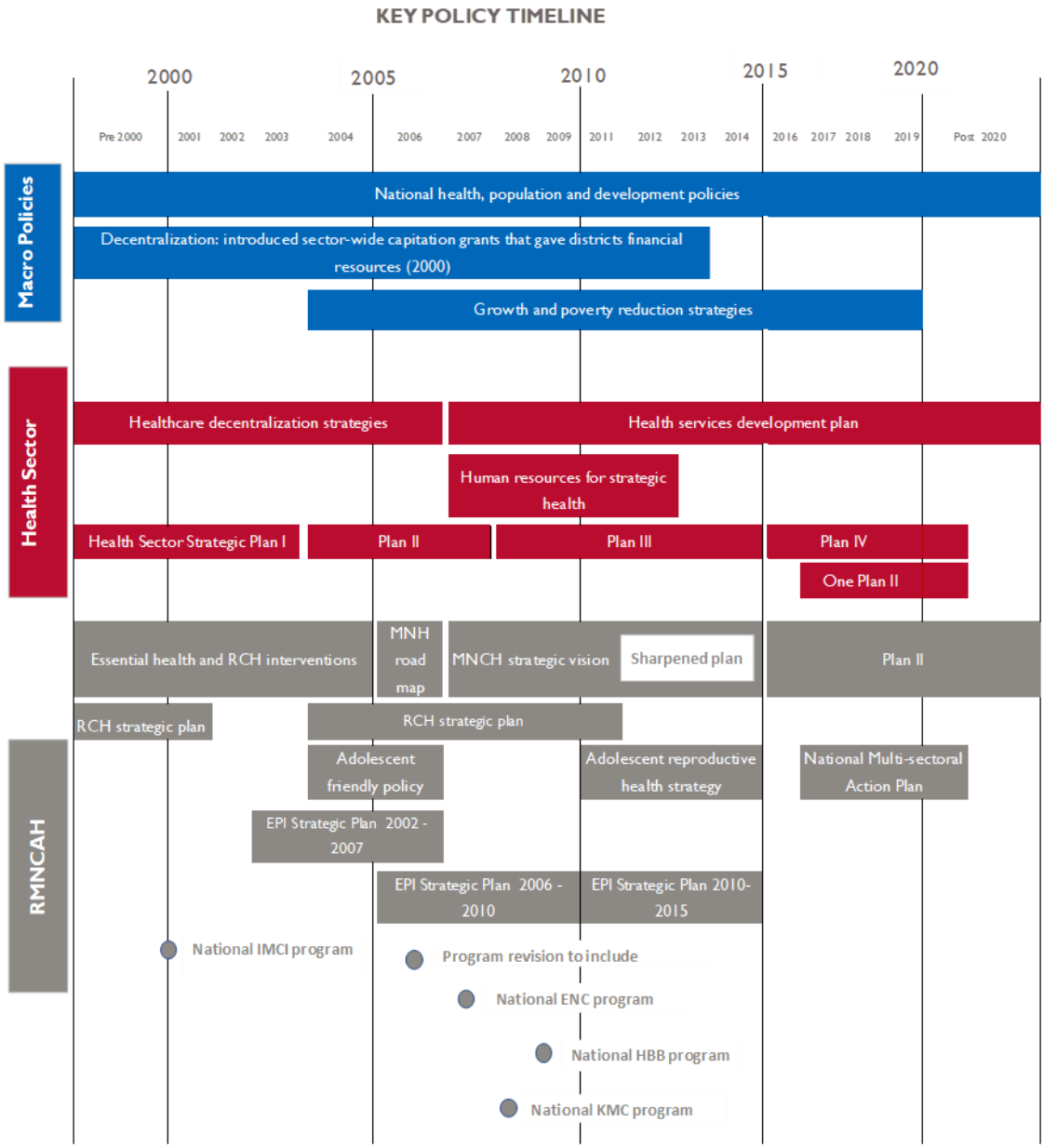
Tanzania uses a Sector Wide Approach (SWAp) as an important element in government structure of the health sector [14]. SWAp provides the framework for collaboration among stakeholders including among ministries, civil society, private sector, and bilateral/multilateral development partners.

HEALTH-SECTOR POLICIES AND STRATEGIES

Many health reforms planned during the 1990s were implemented in the 2000s [2]. This aligned with macro-level decentralization policies and included the sector-wide approach basket funding; and a proliferation of new guidelines, informatics for district planning and management, and new policies focused on child survival. The National Health Policy of 1990 and 2007 clearly outline the country's commitment in addressing maternal, newborn and child health. Also, being the signatory of MDGs, Tanzania focused at a national level to ensure maternal and child health services were strengthened to meet MDGs 4 and 5 targets by 2015.

This priority is reflected in several policy documents produced by the Government of Tanzania. The country's Vision 2025 states that "access to quality reproductive health services for all individuals and reduction in infant and maternal mortality" are among the most important health service goals. The National Strategy for Growth and Poverty Reduction makes maternal, newborn, and child health as one of its major objectives. The Primary Health Service Development Programme (PHSDP/MMAM 2007 – 2017) "addresses the crucial issue of equity by calling for an increase in the coverage and quality of primary health care services for communities living in rural and remote areas." Maternal and child health are also prominently noted in the National RCH Policy guideline 2015; the National Guideline on Essential Reproductive and Child Health Interventions in Tanzania 2003; Reproductive and Child Health Strategy (2005-2010); National Population Policy 1992, 2007; and the Health Sector Strategic Plan 2016-2020 (HSSP IV).

Figure 11. Timeline



CHILD HEALTH POLICIES

Tanzania began investing in maternal and child health services back in 1974 (MOHSW, 2008; NBS, 2014). The services included care during pregnancy and delivery, and family planning. In 1975, the Expanded Programme of Immunization (EPI) was initiated and in 1989 the country adopted the Safe Motherhood Initiative and National Family Planning Services. Tanzania's further commitment in 1994 to provide free maternal, newborn, and child health (MNCH) services was intended to improve access, availability, and equity of life saving interventions. [6] The Baby Friendly Hospital Initiative was adopted in 1992, and in

1996 the country adopted the Integrated Management of Childhood Illness (IMCI) for care of common childhood illnesses. The National Adolescent Reproductive Health services were mainstreamed in the health sector following the International Conference on Population and Development 1994 after understanding the country situation and putting in place strategic documents to guide implementers (Adolescent Health and Development Strategy 2004-2008, ARH strategy 2011-2015). In 2008, the country introduced National Reproductive Health Cancers-Cervical Cancer Prevention and Control, and Health Sector Prevention and Response to Gender-Based Violence.

In line with the poverty-reduction strategy, and supported by national decisions and commitments, in 2005 several child survival interventions were scaled up and strengthened by the Ministry of Health and Social Welfare, and the implementation of IMCI, and the Expanded Program on Immunization, Vitamin A supplementation, and insecticide-treated nets expanded [2]. The period of the 2000s therefore witnessed progress in child health, more so than maternal and newborn health, particularly those delivered through primary care [1]. This period also saw the adoption of the National Program on Prevention of Mother-to-Child Transmission – PMTCT (2003) and between 2005 and the period leading up to 2015, along with continued focus on immunization and malaria.

While policies on childhood nutrition have existed in Tanzania since the 1960s [12], the challenge has been to translate the government commitment to evidence-based interventions that are costed, implemented, and monitored. The National Strategy on Infant and Young Child Feeding and Nutrition was developed in 2005,[5] and in 2016, the National Multi-sectoral Nutrition Action Plan 2016-2021 (MNAP) was launched in an effort to improve breastfeeding practices and the introduction of complementary foods [16].

RMNCH Strategic Plan – One Plan I

The first National Road Map Strategic Plan to Accelerate Reduction of Maternal, Newborn and Child Deaths in Tanzania, 2008-2015 (One Plan) was developed in 2008 to provide guidance on the implementation of MNCH programs across different levels of service delivery and to ensure coordination of interventions and quality service delivery across the RMNCH continuum of care. Progress was measured in mid-term review reports. The One Plan had three key target indicators and 14 operational targets which had to be achieved by 2015:

- Reducing maternal mortality to 193 per 100,000 births
- Reducing neonatal mortality to 19 per 1000 live births
- Reducing under-five mortality rates to 54 per 1000 live births.

Leading up to the MDG reporting, the One Plan was thoroughly reviewed in 2013 to accelerate the progress of the country, particularly toward meeting MDGs 4 and 5. The result was the Sharpened One Plan, which was launched in April 2014 and focused on two of the country's poorest and rural zones — Lake and Western. Interventions with the highest potential impact were scaled up in these zones, including "family planning, care at birth, postpartum care, and postnatal care; mechanisms to avert stockouts of commodities essential to RMNCAH; and increased accountability and transparency at every level of the health system responsible for RMNCAH" [17].

Big Results Now (BRN) was also introduced in 2014 as an initiative across multiple development sectors and supported by the World Bank. Rolled out in three phases, BRN had four areas of focus: human

[5] There are also other strategies that were adopted in relation to adolescent and maternal health: The Adolescent Health and Development Strategy 2004 – 2008, ARH Strategy 2011-2015; National Reproductive Health Cancers (2008); Cervical Cancer Prevention and Control and Health Sector Prevention and Response to Gender-based Violence.

resources for health distribution, health commodities, performance management, and RMNCH. For its RMNCH component, BRN was to complement the Sharpened One Plan, and worked to reduce by 20% the maternal and neonatal mortality in five regions also within the Lake and Western zones by 2018. BRN's objective was to increase demand (through raising community awareness) for Basic Emergency Obstetric and Newborn Care and Comprehensive Emergency Obstetric and Newborn Care; upgrade facilities to offer these services; use mobile phone messaging to support use of the services at the upgraded facilities; and increase voluntary blood donations to keep pace with the demand associated with expansion of emergency care. The inclusion of MNCH in Tanzania's high-profile BRN initiative reflected the recognition that improved MNCH was essential to Tanzania's economic growth [18].

RMNCH STRATEGIC PLAN – ONE PLAN II (POST-2015 ERA)

The One Plan II was rolled out in 2016 and had five strategic objectives and multiple operational targets covering the areas of MNCH, Adolescent Health, Family Planning; PMTCT; Immunization and Vaccine Development; Reproductive Health Cancer; Reproductive Health Gender; and cross-cutting programs. The plan aims to by 2020 to:

- Reduce maternal mortality from 432 to 292 per 100,000 live births;
- Reduce neonatal mortality from 21 to 16 per 1000 live births; and
- Reduce U5MR from 54 to 40 per 1000 live births.

The plan sets out targets for each of the program areas along the RMNCH continuum of care (included in the Appendix are current coverage rates and targets for 2020 for newborn care and child health).

COSTS OF THE ONE PLAN II

The financial resources needed for RMNCAH programming under One Plan II and HSSP IV are projected to increase by nearly one-third, from US$108 million (2015/16) to US$143 million (2019/20). RMNCAH represent a significant proportion of the total HSSP IV resource requirements. By FY2019/20, RMNCAH could represent 12% of health services costs (compared to 11% in 2015) and be the third highest cost program within HSSP IV following HIV and non-communicable diseases (NCDs) [19].

IMPLEMENTATION BOTTLENECKS

A Health Policy Project brief points out that despite the One Plan II detailed roadmap for RMNCAH goals, implementation and costs, achieving the goals may be challenging due to the fiscal space, human resources, and other challenges [19]. An assessment of effective coverage of health interventions for mothers and newborns found major bottlenecks in access, availability, and effective coverage in rural areas of Tanzania [20]

The brief continues that while there is government commitment to scale up of RMNCAH services, allocation of funds will require "concerted and coordinated efforts by the government and partners." There are opportunities for expanding RMNCAH services through the Global Financing Facility (GFF), launched in 2014 to support Every Woman Every Child. This US$4 billion initiative aims to end preventable deaths of women and children globally by 2030, and Tanzania is one of the four initial countries to receive GFF support. Tanzania may be eligible to receive grant funds of up to US$40 million from the GFF trust fund and up to US$20 million from the Achieving Nutrition at Scale Multi-Donor Trust Fund across a five-year period. These funds will be aligned with US$36 million in existing support from USAID for Eliminating Preventable Child and Maternal Deaths.

ESSENTIAL NEWBORN CARE

Despite high level government commitments, Tanzania faces challenges in reaching newborns [21]. The target of having 75% of health facilities with delivery services offering Essential Newborn Care was not realized by 2015 (MOHSW, 2014; WHO, 2014). The prevalence of breastfeeding within one hour of birth declined from 59% in 2004/05 to 49% in 2010. In Tanzania, a higher prevalence of breast feeding within one hour was noted in urban areas, among educated and wealthier women, among women delivering at health facilities, and among women delivering with a skilled birth attendant [22]. To ensure accountability, a RMNCH Score Card was introduced where regional commissioners were required to submit quarterly reports showing the percentage of women using contraceptives, the percentage of pregnant women attending antenatal clinics, and the percentage of women who deliver their babies in the presence of a skilled attendant. Despite this effort, newborn targets were not met by 2015.

The main barriers in service delivery along the continuum of care that impact newborn care include a severe shortage of trained health workers and lack of critical infrastructure, equipment and supplies [23]. Most of the estimated annual newborn deaths occur at home, without any formal contact with the health system [21]. Despite the high coverage of antenatal care, only 49% of women give birth with the help of a skilled attendant.

In 2009, Improving Newborn Survival in Southern Tanzania (INSIST) trial (mainly funded by Save the Children's Saving Newborn Lives program and implemented by several partners) was launched with the aim to develop, implement, and evaluate two interventions to improve neonatal survival: 1) home-based counseling interventions; and 2) quality improvement intervention at primary health care facilities. An assessment of the costs of INSIST found that home-based counseling intervention involved substantial design and set-up costs, largely for training of community health workers (CHWs) and follow-up. The cost of the home-based counseling intervention was US$19.5 per mother-newborn pair. Moving from two CHWs per village to one CHW decreased costs by 35%, thus increasing the sustainability of the program; the financial cost in a 100,000 population at 95% coverage was US$6.9 per mother [21].

Also in 2009, the Tanzanian Ministry of Health (MOH) launched a national Helping Babies Breathe (HBB) training program. The program was scaled through the funding support of the Children's Investment Fund Foundation and implementation partner Jhpiego, reaching 16 regions throughout Tanzania in a phased region-by-region rollout among a targeted 14,000 facility-based providers. The MOH was to integrate HBB expansion with Essential Newborn Care to achieve economies of scale and demonstrate global standards of newborn care [24].

The White Ribbon Alliance (WRA) was established in Tanzania in 2004 to advocate for policies and programs across government and the community (https://www.whiteribbonalliance.org/tanzania/). According to their website, WRA secured a 52.6% increase in country maternal health budget in 2017. WRA also led a sustained campaign in Ruka region, and through facility assessments, engagement of civil society, and campaigning at local and national levels, they succeeded in ensuring members of parliament include maternal and newborn priorities into the government's Big Results Now strategy [25].

IMCI/ICCM

IMCI was developed by WHO and UNICEF in the 1990s and introduced in over 100 countries [26]. Initial evaluations demonstrated improvements in provision of child care. However, later on studies began to find mixed results, leading to concerns that health workers often do not adhere to IMCI guidelines [27].

An assessment in Mwanza region of Tanzania found that only 51% of health workers were trained on IMCI (below the recommended 60% by WHO) [28]. Health workers reported that the frequent changes and updates to the management of childhood illnesses made adhering to IMCI challenging. For example, in this study, health workers pointed out the conflicting information between new malaria case management guidelines and IMCI. This requires regular review of the IMCI at the national level. Another challenge identified was the shortage in supplies and essential drugs for the treatment of pneumonia, diarrhea and malaria, in addition to the shortage of health care workers (as IMCI-trained staff often leave or are transferred).

IMMUNIZATION

As noted earlier, the EPI was launched in 1975. However, implementation was slow due to lack of financing and infrastructure. The economic reforms instituted in the 1990s, accompanied by decentralization, health sector reforms, and increasing donor involvement led to expansion of the program [29]. At the time, funding modalities for vertical programs were aligned with SWAPs. Health sector reform included reorganization of the health system and of supply chain systems to integrate many vertical programs, including EPI.

The WHO's Global Vaccine Action Plan (GVAP) was endorsed by 194 member states of the World health Assembly in 2012 and calls for targets to be met by 2020 through more equitable access to vaccines [30]. The 2017 report details the status of countries, including Tanzania, in implementing the GVAP targets [31]. Among all the targets reported on, of note was that Tanzania was one of two low-income countries (along with Bangladesh) to reach DTP3 national coverage of >90%, and also was one of the few countries to reduce disparities with DTP3 coverage between poorest and richest ranging from 81-95%.

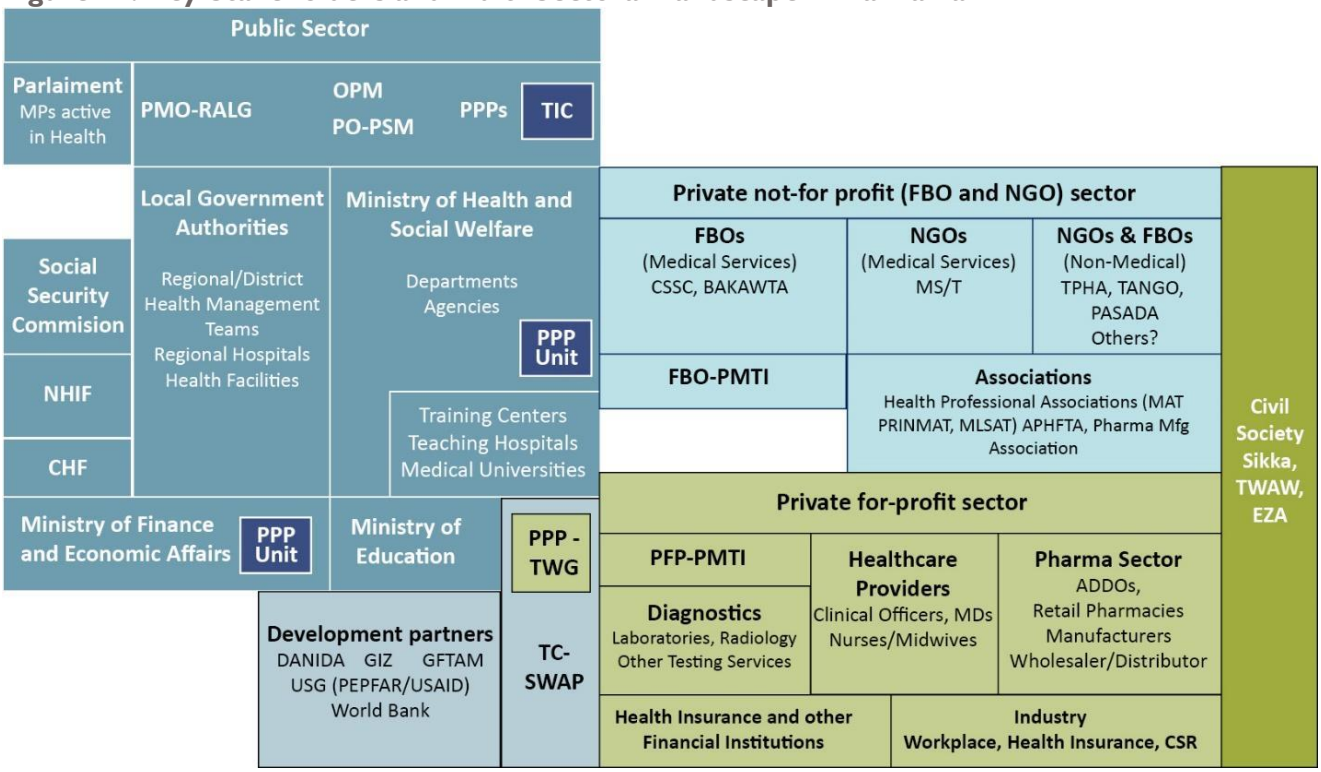
NUTRITION

Tanzania has had policies on childhood nutrition since the 1960s [12]. The challenge has been to translate the government commitment to evidence-based interventions that are costed, implemented, and monitored. The 2016-2021 MNAP sets seven key areas that are to be scaled up: 1) maternal, infant, young child and adolescent nutrition; 2) prevention and control of micronutrient deficiencies; 3) integrated management of acute malnutrition; 4) prevention and management of diet related non-communicable diseases; 5) integration of multi-sectoral nutrition sensitive interventions; 6) improving multi-sectoral nutrition governance; and 7) establishing multi-sectoral nutrition information systems [16].

GOVERNANCE AND PARTNERSHIPS

In comparison to other low- and middle-income countries, Tanzania is well known for its large number of stakeholders and foreign aid partners [32]. There are a large number of bilateral, multilateral, international, and local NGOs groups working in Tanzania on RMNCH (see Appendix B for list of stakeholders). Here we elaborate on some of the key players and initiatives.

Figure 12. Key Stakeholders and Multi-Sectoral Landscape in Tanzania



Source: [33]

GOVERNMENT AND MINISTRY OF HEALTH

The coordination and management functions of the health systems are shared between the MOH, which recently became known as the Ministry of Health, Community Development, Gender, Elderly and Children, and the President's Office Regional Administration and Local Government (PORALG).

The main role of MOH is formulation of policies and technical guidelines, overseeing service delivery, managing and supervising national and consultant hospitals. PORALG oversees regional and district hospitals, health centers, dispensaries, and community health workers.

Within the MOH, the Reproductive and Child Health Services (RCHS) section plays four key roles: prepare and review policy guidelines and manuals for maternal, child, adolescent, and community health services; coordinate, monitor, and evaluate maternal, child, adolescent and community based health care including immunization and vaccination development program and community-based family planning; liaise with other ministries and relevant organizations dealing with reproductive health and nutrition; and review the list of standard, essential equipment and supplies for the provision of reproductive health.

The Ministry of Finance and Economic Affairs manages the overall revenue, expenditure, and financing and determines the expenditure allocations to different government institutions. The President's Office, Public Service Management (PO-PSM) coordinates personnel and administration planning for the entire government. Local Government Authorities and Ministries request staffing requirements from PO-PSM. The MOH posts staff to fill local needs based on PO-PSM-approved vacancies.

Communities are involved through councils and are engaged in coordination of activities of CHWs, and inclusion and participation in health boards and health facility governing committees. The government monitors compliance to service agreements with NGOs through a public-private partnership framework.

UNITED STATES GOVERNMENT

The US government has maintained bilateral relations with Tanzania since its independence in 1961. US-funded development assistance programs began shortly thereafter [18]. The US-Tanzania relationship on health and development has experienced political highs and lows over the last six decades, with a challenging period being the phaseout of the USAID Mission in the mid-1980s in response to Tanzania's failure to make regular loan payments. Since the re-opening of the Mission in 1987, the bilateral relationship on development has been strong. The US-Tanzania Country Development Cooperation Strategy for 2015-2019 identifies women and youth empowerment, sustainable, inclusive broad-based economic growth, and improved democratic governance as overarching goals.

In 2014, US overall spending on health activities reached more than $450 million.[6] The principal US government agencies carrying out work on health are USAID and CDC. CDC contributes to MNCH through its PEPFAR-funded activities. The Peace Corps and Department of Defense Walter Reed Army Institute of Research play important roles in the areas of training and research. The vast majority of US health assistance, which totaled $368 million by 2015, is channeled through PEPFAR (62%).[7] Several programs areas contribute to MNCH. Direct funding for MNCH programs totaled $12 million in 2014, and activities to strengthen immunization services received an additional $1.2 million. The President's Malaria Initiative (PMI), which supports much through its focus on indoor residual spraying and preventing malaria infection provided$45 million in funding. Funding for voluntary family planning activities, which contribute to maternal health through emphasis on health timing and spacing of pregnancies, totaled $26 million.

Tanzania is one of 34 MNCH priority countries under USAID's effort to address preventable maternal and child health. The Maternal and Child Survival Program, launched in 2014 and administered by Jhpiego, is currently scaling activities in Tanzania [18]. The United States also contributes to the Global Fund and Gavi, the Vaccine Alliance (hereafter referred to as Gavi).

GLOBAL HEALTH INITIATIVES (GHIS)

There have been multiple GHIs since the early 2000s, the most prominent being the Global Fund to Fight AIDS, Tuberculosis, and Malaria, Gavi, the Roll Back Malaria partnership, UNITAID, Stop TB Partnership, and the Global Leprosy Programme [32]. Some GHIs have their own governance structures operating through specifically created committees with a range of stakeholders including public and private civil society organizations. Others operate through UN agencies, or through bilateral agencies (e.g., all US-based GHIs such as PEPFAR are housed under the CDC) [32]. In Tanzania, while the GHIs are perceived as "committed and aligned with the health sector's strategic plan," there are challenges in coordinating and harmonizing implementation [32]. There is therefore duplication of activities at the implementation level, particularly at the district and local levels. Their inability to use SWAp mechanisms and instead use their own structures and mechanisms is a deterrent to effective coordination.

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[6] http://maternaltz.csis.org/tanzania/

[7] https://explorer.usaid.gov/cd/TZA?measure=Obligations&fiscal_year=2015&implementing_agency_id=1

PRIVATE SECTOR AND PUBLIC-PRIVATE PARTNERSHIPS

The private sector in Tanzania is composed of a diverse and large group of both for-profit and not-for-profit organizations. A private sector assessment (Sustaining Health Outcomes through the Private Sector) in 2013 concluded that the full scope of private health sector activity is excluded in assessments and planning of the health system [33]. Over one-third of general health services could be accessed through private sector facilities, faith-based organizations, and other not-for-profit facilities. However, private sector stakeholders are not involved in the Comprehensive Council Health Plans at the district level. While there is high-level commitment to PPPs at all levels and a supportive legal and regulatory environment, the PPP units are under-resourced [33].

One of the prominent PPP models implemented in Tanzania is the accredited drug dispensing outlet program launched in 2003 [48]. Implemented by the government and supported by multiple partners, the program takes a comprehensive approach that combines owner and dispenser training, government accreditation based on standards, business incentives, local regulatory enforcement, and demand generation for quality products and services. By 2015, the program had been rolled out in all mainland districts with 9,000 shops accredited and over 19,000 dispensers trained.

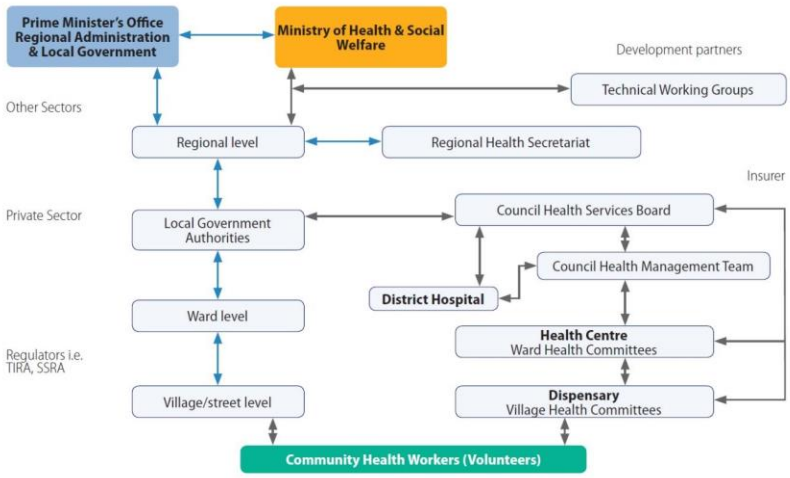
COMMUNITY PARTICIPATION

Community participation has been part of health sector reform since the 1990s [14]. More recently and as part of the decentralization reform of the health sector, Council Health Service Boards and health facility committees (hospital, health center, and dispensary committees) have been formed. Assessments show that these committees have limited influence and are not engaged effectively in policy, budgeting, and planning [14].

HEALTH SYSTEMS

While Tanzania has seen great improvements in its child health outcomes, continued progress is contingent on a well-resourced, efficient health system that delivers services of quality. In this section, we will summarize the key health systems inputs and delivery platforms and highlight key constraints and plans to address them in the country.

Figure 13. Map of Key Health Systems Organization Structures and Decision-making Bodies in Tanzania



Source: [14]

ORGANIZATION OF THE HEALTH SYSTEM

The health system is largely decentralized. Priorities are set at the district level, which is responsible for health service implementation and supervision of individual facilities on a monthly basis. The point of entry for mothers and children is the community-level dispensary, which caters to between 6000-10,000 people and provides basic services including exams, receiving advice from a clinical officer or nurse, procuring medicines and medical supplies, and immunization services. Some dispensaries are equipped for labor and delivery; many offer PMTCT services and treatment options. Health centers, the next tier up, are expected to serve about 50,000 people (approximately the population of one administrative division). Health centers provide more comprehensive services than what is available at dispensaries, including seeing a physician and providing in-patient services. Patients with more complicated cases are referred to the district hospital (each district is supposed to have one district hospital). In places with no government district hospital, faith-based or NGO-run hospitals are designated as the district-level provider. Regional hospitals offer services similar to those at the district level but have specialists in various fields with more services than those available at district-level hospitals and regional referral hospitals. Long distances and transportation costs are obstacles to accessing care. The most complicated cases are referred to a handful of specialized national referral hospitals in the capital city of Dar es Salaam. Patients who live closer to a referral hospital or prefer for more distant health centers or the district hospital can bypass community-level facilities altogether.

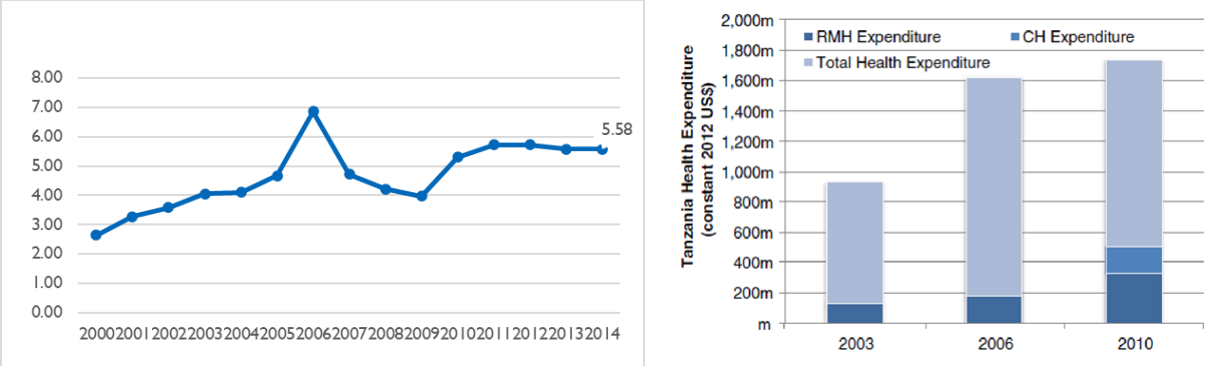
PRIVATE SECTOR

The private sector accounts for approximately 40% of health facilities in the country (not including drug sellers or pharmacies), 35% of which are faith-based organizations [34]. According to the Primary Health Services Development Plan 2007-2017, health facility ownership in mainland Tanzania is broken down as follows: government 64.2%, "voluntary agencies" 17.7%, private institutions 15%, and parastatal 3%. Faith-based organizations tend to be located in disadvantaged areas, and some are funded by the government through grants, basket funds, and other forms of support (medicines, equipment, staff secondment, and training). On the other hand, 90% of private for-profit health facilities are situated in urban areas.

FINANCING

Although there are considerable efforts for the government to fund its own expenditures, gaps remain. There is a dependency on international aid, particularly for development initiatives and public service delivery. The country is one of the largest recipients of international aid in sub-Saharan Africa, receiving its highest flows from the United States, the World Bank and the EU. From 2007 to 2011, approximately one-third of government spending was financed by donor funds, although this share fell to about 20% from 2012 to 2014 [35]. The country's biggest donors are the United States, Canada, Denmark, Sweden, Germany, Ireland, the United Kingdom, Finland, Japan, the African Development Bank, the World Bank, and the European Commission. Tanzania spends 5.56% of its GDP on health and has been on an uphill trajectory since 2000 despite the high increase and related drop-off in 2006-2009. This places Tanzania within the average range of health expenditure compared to other sub-Saharan countries. The public sector accounts for about 40% of total expenditure. While government health expenditure and external funding have nearly tripled since 2003 [36], the share of total out-of-pocket spending has also been rising and leveled off at 20% (World Bank).

Figure 14. Total Health Expenditures (% of GDP)



Source: World Bank [36]

Resources for RMNCAH have also increased over the years. However, it is important to note that Tanzania relies more on out-of-pocket expenditures for RMNCH activities, with 56% of child health spending coming from out of pocket, 30% from government sources, and 13% from external sources [36]. This is particularly concerning given that services are free of charge in the country.

RESULTS-BASED FINANCING

Prompted by need to achieve progress, a payment for performance scheme was introduced in 2011 in Pwani region to inform a national payment for performance program [37]. The actors involved included: the bilateral donors in the Health Basket Fund, the World Bank, the government, and stakeholders and partners outside of the Health Basket Fund. Norway in particular took a leading role in setting the agenda [37]. Under the program, health facilities are provided with financial incentives based on achievement of targets relating to maternal and child health care. Performance measured through the health management information system is established for targets for specific intervention (e.g. institutional delivery) or for care provided during a service (e.g. intermittent preventive treatment for malaria during antenatal care). Therefore, results-based financing seeks to increase coverage by incentivizing health facilities to increase delivery of core services in the Basic Health Services Package [14]. The program requires that 75% of the incentive is distributed to health workers and the remaining invested in the facility to maintain or improve services. The impact of the program on improving coverage and quality is mixed [38].

HUMAN RESOURCES FOR HEALTH

The MOH has recommendations for staffing levels at different levels of the health system: two clinicians and two nurses for each dispensary; four clinicians and nine nurses for health centers [39]. The health workforce density in 2012 was 4.6 doctors, nurses and midwives per 10,000 (Figure 15) which was far below the WHO minimum density threshold of 23 per 10,000 individuals [40]. In Tanzania, on average there is one prescriber (generally mid-level providers trained in-country rather than medical doctors) in each primary facility with the workload averaging 29 outpatients per clinician per day in health centers and 20 in dispensaries [39].

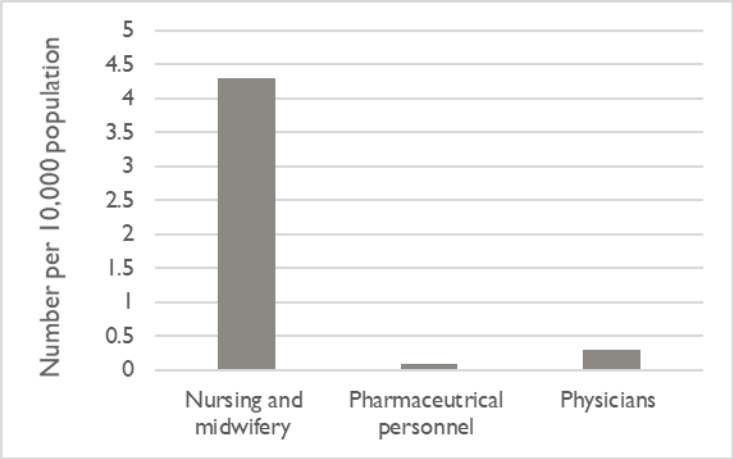
There are also stark rural-urban disparities in workforce coverage, where only 55% of the total workforce work in rural areas where 70% of the population live. The average number of health workers

ranges from 0.3 per 1000 in Bukombe district to 12.3 per 1000 people in Moshi district. Trained health professionals are clustered in regions with higher levels of care, i.e., specialist hospitals.

Physicians and more highly specialized professionals are more likely to be male, while the majority of nurses and midwives are female [41]. Gender parity in training may lead to a more responsive health systems based on health care users' preferences and enhance health care utilization.

An assessment completed as part of an evaluation of intermittent preventive treatment in infants found that only 20% of recommended number of clinical staff and 14% of recommended number of nurses were employed in facilities [39]. Compounding the shortage in staff, a high level of absenteeism was documented with approximately a third of staff absent. Finally, despite understaffing, the nurses in primary facilities "did not appear to be overworked, suggesting a that for preventative care there is a lack of balance between service supply and demand," and efforts to improve productivity of current staff may improve quality of care and health outcomes.

Figure 15. Number of Physicians, Nurses, and Midwives per 10,000 Population in 2012, Tanzania



Source: World Development Indicators

DELIVERY PLATFORMS

Several health systems assessments have been done in Tanzania in the past decade to determine systems constraints that impede implementation and delivery of RMNCAH strategies [14, 42]. In this section, we will summarize the findings from these assessments, focusing on the different delivery platforms (community, primary health care, and tertiary care) and also on supply and demand side barriers to delivery within each of these levels. Overall, a mid-term review of the Health Sector Strategic Plan III concluded that progress is being made more in policy development and less on service delivery; innovations are not trickling down fast enough to front-line health facilities; and vertical programs continue to perform better than general and reproductive health services [14].

COMMUNITY LEVEL: COMMUNITY HEALTH WORKERS AND TASK-SHIFTING

Tanzania has set plans to systematically involve CHWs into task-shifting arrangements to improve access to maternal and child health services. The National CHW task force was established to advise the

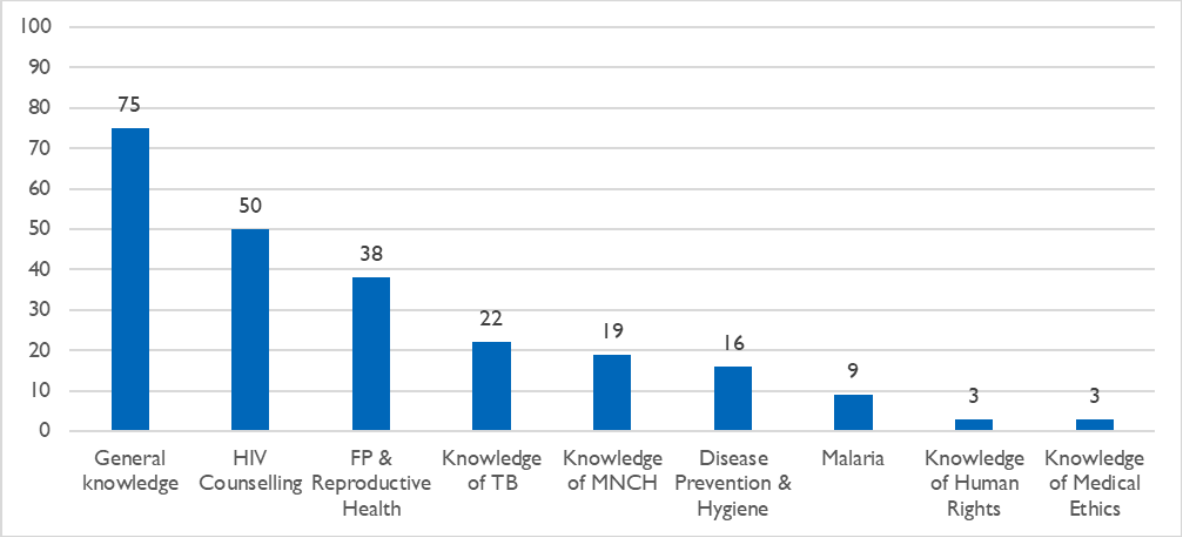
Ministry of Health, Community Development, Gender, Elderly and Children on the policies, strategies, and guidelines [43.][8]

The CHW model was introduced in Tanzania following the 1978 Alma Ata Declaration. For many decades, the Primary Health Care (PHC) and CHW programs were left uncoordinated, as was the case in many countries. Approximately 41,000 CHWs are currently employed across Tanzania by a network of development partners and NGOs [44]. About one in four of them have the minimum level of education level required to be a government employee, and therefore employed on a voluntary basis. CHWs are not evenly distributed across all regions: Rukwa had the highest number of CHWs per capita (61 per 10,000 population) and Katavi had less than one CHW per 10,000 with a median of seven CHWs per 10,000.

One of the main goals of the CHW Task Force is to institutionalize and integrate CHWs into the health system and standard practice throughout the country. "A critical question for the Tanzanian health sector has been whether one CHW would be able to address all the needs of an integrated maternal neonatal child health (MNCH), HIV/AIDS, and nutrition program." (https://chw-lap.muhas.ac.tz/index.php/history-of-chws-tanzania). As Figure 16 shows, knowledge of MNCH stands at only 19%,

[8] In July 2013, members of Johns Hopkins University's Bloomberg School of Public Health (JHU/JHSPH) and Muhimbili University of Health and Allied Sciences (MUHAS) engaged in discussions with members of the CHW Task Force to brief them on the JHU-MUHAS mandate given from the USAID Tanzania mission to support the scale-up of Tanzania's integrated CHW program. This launched the Community Health Worker-Learning Agenda Project (CHW-LAP). https://chw-lap.muhas.ac.tz/index.php/chw-lap-overview

Figure 16. Percentage of Community Health Workers with Knowledge of Specific Health Service Areas, 2015



Source: [43]

PRIMARY HEALTH CARE SYSTEMS

Tanzania has made great headway through PHCs in reducing child and infant mortality and in the control and treatment of HIV and malaria. Vertical programs have made important contributions to these health improvements. Their success has been contingent on their flexibility to appoint programmatic and technical supervisory staff to ensure guidelines and procedures are followed [42]. Additional resources directed at these programs allowed them to ensure consistent availability of necessary pharmaceuticals and commodities at service delivery sites.

According to the Health Sector Strategic Plan (HSSP) III, 90% of Tanzanians live within 5km of a PHC facility. Through the Primary Health Care Service Development Programme, the government committed to achieving PHC services for all by 2017 [42]. The aim was to establish one dispensary per village and one health center per ward [14]. The MOH developed standard operating procedures and accreditation mechanisms to delivery and quality of services within PHC facilities. Therefore, while there is comprehensive guidelines and action plans, these are not transmitted from the national level to lower level health facilities [42].

One of the main reasons for this constraint in implementation is that decentralization of the health sector has not been fully achieved, thus hindering operations of facilities [14]. Therefore, health facilities are not autonomous financially as funding historically was channeled through local government authorities. Another constraint is the lack of engagement of the private sector through public-private partnerships [14].

As noted above in the HRH section, the challenges in the quantity and quality of providers is a major constraint in delivering care at the primary health care level. For example, many of the facilities that have been constructed in the past decade are not staffed appropriately [42]. While there are plans to respond to these challenges, whether these plans can be implemented effectively is a critical consideration.

PROVISION OF BASIC SERVICES. The 2012 Service Availability and Readiness Assessment (SARA) showed that great variability in service availability in different health facilities [14]. Child health immunization coverage was high, with three quarters of health facilities offering immunization services. However, coverage for malnutrition is low, with Tanzania being one of the 10 worst affected countries in the world.

INTEGRATION. While vertical programs have contributed to the performance of the health system in Tanzania, they have posed challenges to integration of RMNCAH services as they compete for staff particularly at the supervisory level [42]. Strict donor funding and reporting streams make it challenging for coordination at the central level between programs, and sometimes even within programs (e.g. prevention versus treatment of HIV [42].

TERTIARY CARE

While many RMNCAH services can be delivered at the community and primary health levels, a well-functioning hospital and referral system needs to be in place for interventions that require management and treatment of high-risk cases.

In addition to the constraints faced by the primary health care system, the referral system in Tanzania faces specific challenges. Many of the health facilities do not have the capacity for an early identification and warning system. Many facilities also do not have the resources to transport patients to referral facilities. Providers do not have the capacity or motivation to appropriately complete the paperwork required to transfer patients [42]. Patients without referrals therefore self-refer and are charged for services, finding themselves paying for higher-level services. According to one assessment, basic medical life-saving equipment is not consistently available in hospitals [42].

FACILITY DELIVERY. The quality of care at health facilities is another major constraint in Tanzania. One study conducted in Tanzania found that women were significantly more likely to deliver in a health facility if they received antenatal care in a government health center or a faith-based mission facility than were women who received antenatal care in a dispensary [45]. This was the case even in areas with high levels of facility delivery overall [46]. Women who live further from higher-level health facilities (i.e. hospitals) who had access to lower-level facilities (dispensaries) were more likely to deliver at home. Finally, there are large disparities among women in relation to their income, education, and parity, which will require interventions such as cash transfers and vouchers to improve access. In addition to quality, women could be unaware of the types of services available through the continuum of care and where to receive those services. One study found that mothers in Tanzania were aware of maternal health services during pregnancy and delivery, but not aware of postpartum complications and follow up services [47].

CONCLUSIONS

- Tanzania has made major improvements in child health outcomes leading up to 2015. Indicators from 2016, however, indicate a possible stagnation in the rate of progress. In addition, the key interventions along the RMNCAH continuum of care, particularly in relation to childhood illnesses, newborn care, and nutrition (e.g. exclusive breastfeeding) must be scaled up and effectively implemented.

- The causes of deaths in children, particularly those that have survived the first month of life, are shifting from predominantly infectious diseases to "other" causes that are largely non-communicable diseases and injuries. This shift and its implications will need to be considered in designing child health strategies, resources, and health systems capacity moving forward.

- Interventions for reproductive health and maternal health continue to be low, indicating challenges in the quality and continuity of care in health facilities. Women's unwillingness to deliver in lower-level facilities and their lack of access to hospitals makes access to a skilled birth attendant at birth challenging.

- Staff shortages continue to be one of the major challenges in Tanzania. Reports show that despite the shortages, existing resources and capacity could be made more efficient through staff incentive and training programs.

- Throughout the health sector, Tanzania's government is committed at the highest level to evidence-based and reform strategies. This is exhibited in the comprehensive set of policies, guidelines, and implementation plans. Challenges appear to be related to the implementation and reach of policies to local government and front-line facilities. Implementation and delivery has to be improved to ensure effective coverage of RMNCAH strategies.

- Tanzania has a large number of partners and stakeholders working on health and RMNCAH specifically. While partners have helped in Tanzanian's impressive progress in the past few decades, the challenges of coordination at district and local levels of the multitude of strategies and interventions leads to loss in efficiencies and effectiveness. This becomes critical in ensuring for example integration of services are possible, and that programs work to strengthen health systems in a complementary way and do not compete for resources and staff.

- One of the key areas for improvement is the effective engagement of community health workers into the health system through formal training and hiring practices. The private sector also seems to be untapped and could be better engaged and supported to enter into the health sector.

DESK REVIEW APPENDICES

APPENDIX A. RMNCAH STRATEGIC PLAN – ONE PLAN II: NEWBORN AND CHILD HEALTH TARGETS

Newborn care

Indicator	Baseline Value	2020 Target
Neonatal mortality rate (deaths per 1000 live births	21	16
Postnatal care visit within 2 days	41%	80%
Early initiation of breastfeeding (within 1 hour after birth)	49%	90%
ARV prophylaxis for HIV exposed infants	56%	80%; elimination at 90%
Hospitals with functional KMC services	20%	75%

Source: One Plan II

Child care

Indicator	Baseline Value	2020 Target
U5MR (deaths per 1000 live births	54	40
Immunization		
DPT-HepB-Hib 3 Region coverage	84% in 90% of the regions	90% in 90% of the regions
DPT-HepB-Hib 3 Councils coverage	83% in 90% of the councils	90% in 90% of councils
Measles Rubella coverage	80% in 90% of the councils	90% of 90% of the councils
Vitamin A coverage	61%	90%
Nutrition		
Exclusive breastfeeding for 6 months	50%	90%
Appropriate complimentary feeding at 6-23 months	56%	90%
Stunting	35%	22%
Underweight	16%	14%
Anemia in U5	59%	<20%
HIV prophylaxis and treatment		
ARV coverage among HIV exposed children	56%	80%: elimination 90%
Cotrimoxazole coverage among HIV exposed children	34%	80%
Testing coverage among HIV exposed children at 6 weeks or 12-18 months	30%	90%
PMTCT	8.6%	Elimination< 5%
% children in need ART on treatment	26%	60%
Pneumonia, Malaria and Diarrhea		
Care seeking for pneumonia	71%	90%
Care seeking for diarrhea	53%	90%

Care seeking for malaria/fever	77%	90%
ITN use among U5	73%	80%

Source: One Plan II

APPENDIX B. LIST OF RMNCAH KEY ACTORS AND STAKEHOLDERS IN TANZANIA

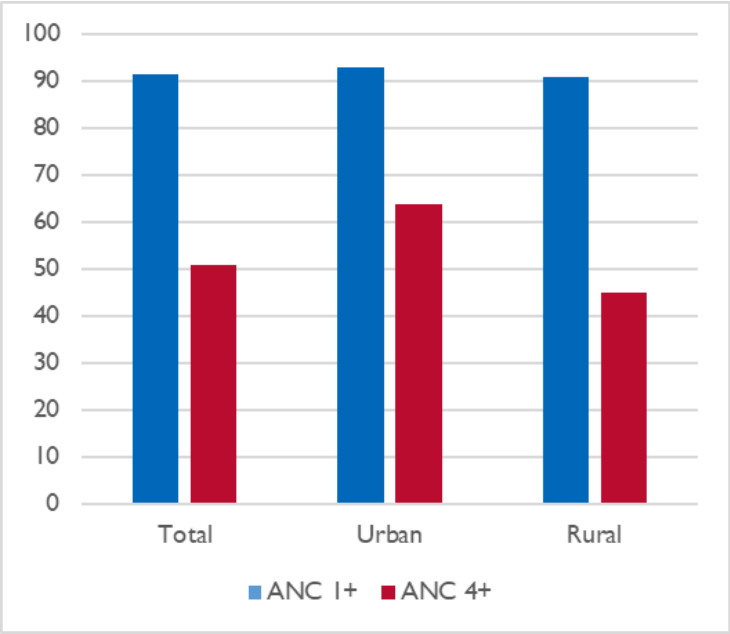
GOVERNMENT SECTOR
Community Health Fund
Local Government Authorities
Ministry of Finance and Economic Affairs
Ministry of Health and Social Welfare
Prime Minister's Office
Prime Minister's Office-Regional Administration and Local Government
Regional Health Management Team
Tanzania Investment Centre
BILATERALS
Australia AusAID
CIDA/HAND
Danish Technical Cooperation
GTZ
Ireland – Irish AID
Netherlands
United States International Development Agency (USAID)
USA CDC
UN AGENCIES
UNDP-MDTF
UNFPA
UNICEF
WHO
World Bank
GLOBAL HEALTH INITIATIVES
GFTAM
PEPFAR
PRIVATE NOT-FOR-PROFIT SECTOR
Christian Social Services Commission
National Muslim Council of Tanzania
Private Medical Training Institute
Private Nurses and Midwives Association of Tanzania
Tanzania Association of NGOs
Tanzania Public Health Association
CIVIL SOCIETY
ANPPCAN TANZANIA
Art in Tanzania (AIT)
Association of Journalists Against AIDS in Tanzania (AJAAT)
Association of Private Health Facilities in Tanzania (APHFTA)

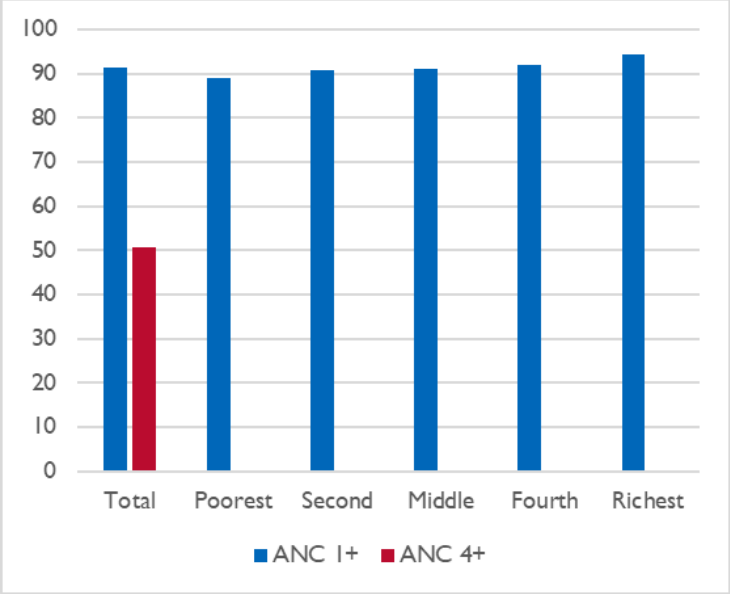
Caucus for Children's Rights (CCR)
Children Education Society (CHESO)
Children's Dignity Forum (CDF)
Christian Social Services Commission
Compassion International Tanzania
Comprehensive Community Based Rehabilitation in Tanzania (CCBRT)
C-SEMA
DodomaTanzania Health Development (DTHD)
Dogodogo Center
Huheso Foundation
Improving Maternal, Newborn and Child Health in Mwanza
KIWOHEDE
Ministry of Community Development Gender and Children (MCDGC)
Mkombozi
Mwanza Youth and Children Network (MYCN)
PACT Tanzania
PASADA
TADEPA
Tanzania Early Childhood Development Network (TECDEN)
Tanzania Education Network (TENMET)
Tanzania Women and Children Welfare Centre (TWCWC)
TUSEIS
Uzazi na Malezi Bora Tanzania (UMATI)
Watoto Salama
INTERNATIONAL ORGANIZATIONS
ACCESS Tanzania
BASICS
Care
Elizabeth Glaser Pediatric AIDS Foundation (EGPAF)
Engender Health
Femina HIP
German Foundation for World Population
Global Network of Religions for Children (GNRC)
Health Improvement Project Zanzibar (HIPZ)
IntraHealth International Inc.
John Snow International
Jphiego
Marie Stopes
Minnesota International Health Volunteers (MIHV)
Options Consultancy
PATH
Pathfinder
PharmAccess Foundation
PLAN International

R4D
Right to Play
Save the Children
SOS Children's Villages
The White Ribbon Alliance
Voluntary Service Overseas (VSO)
Women and Health Initiative
World Vision

APPENDIX C. ADDITIONAL FIGURES AND GRAPHS

Figure c1. Disparities in Antenatal Care Coverage by Residence and Wealth, Tanzania 2015-2016

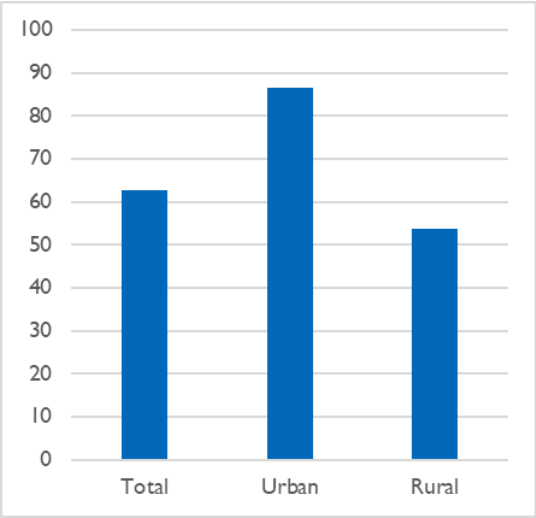


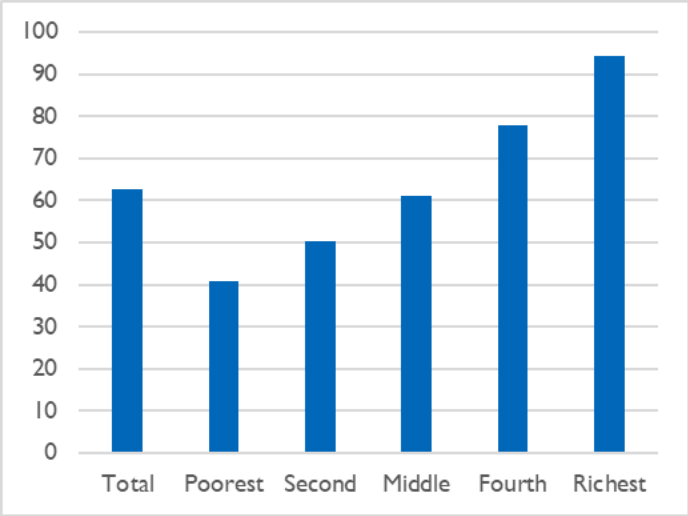


Source: DHS (http://data.unicef.org)

Delivery Care

Figure c2. Disparities in Coverage of Institutional Deliveries, by Residence and Wealth, Tanzania 2015-2016

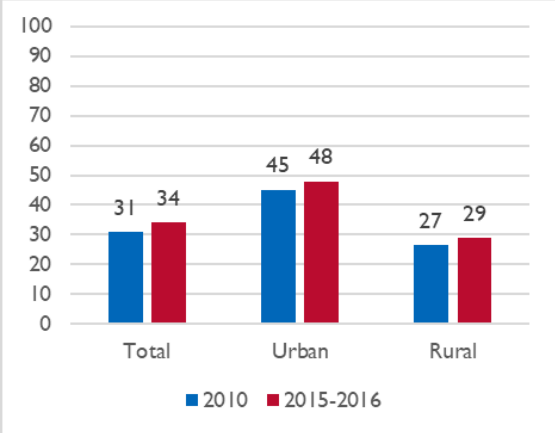


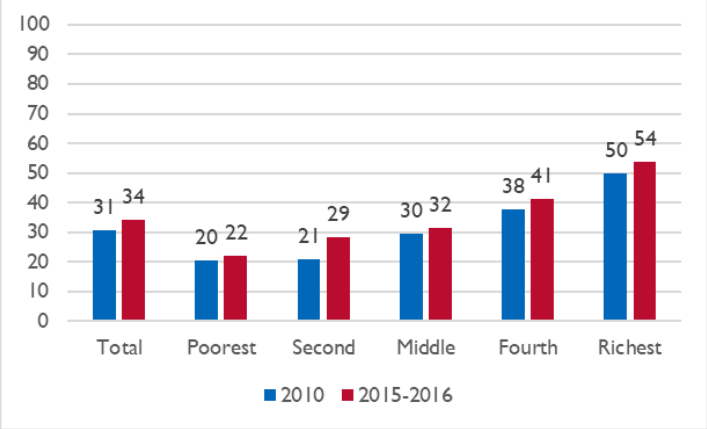


Source: DHS, 2015-2016 (http://data.unicef.org)

Newborn Care

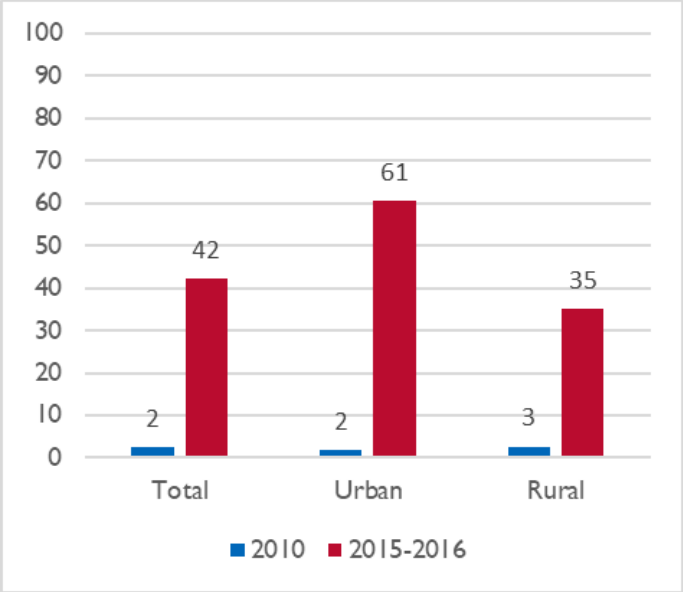
Figure c3. Postnatal Care Coverage within 2 Days after Birth for Mothers (%), by Residence and Wealth, Tanzania

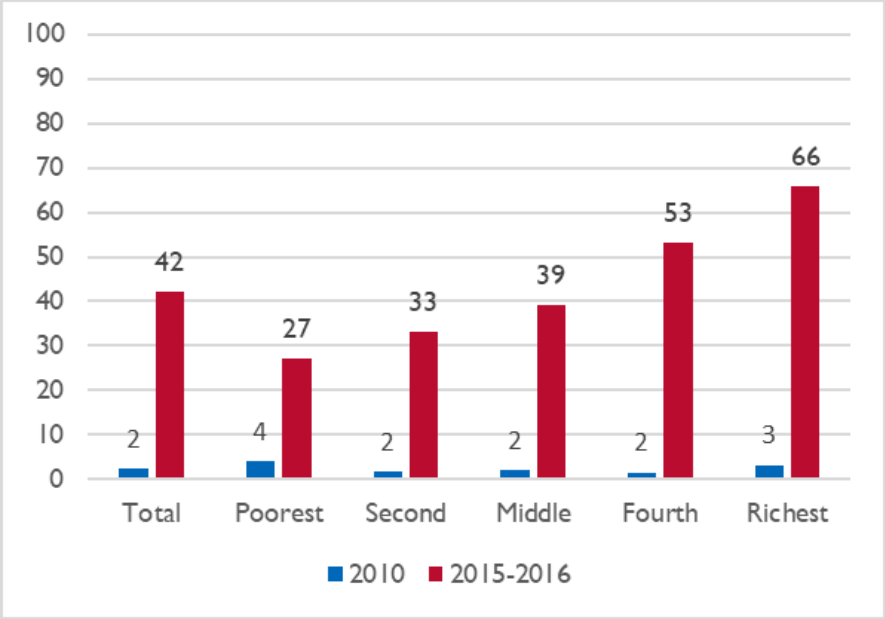




Source: DHS (http://data.unicef.org)

Figure c4. Percentage of Births with a Postnatal Checkup in the First 2 Days after Birth, by Residence and Wealth, Tanzania[9]

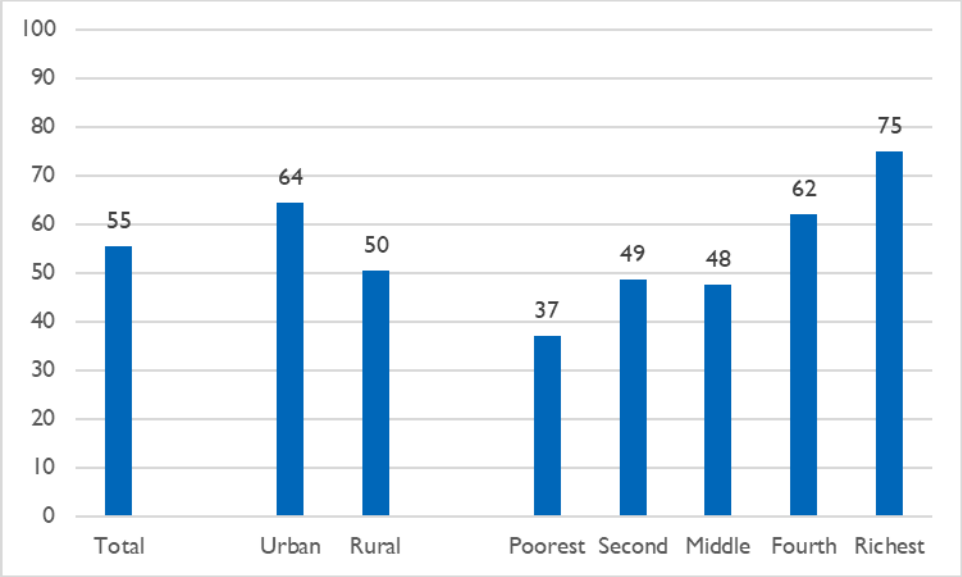




Source: DHS (http://data.unicef.org)

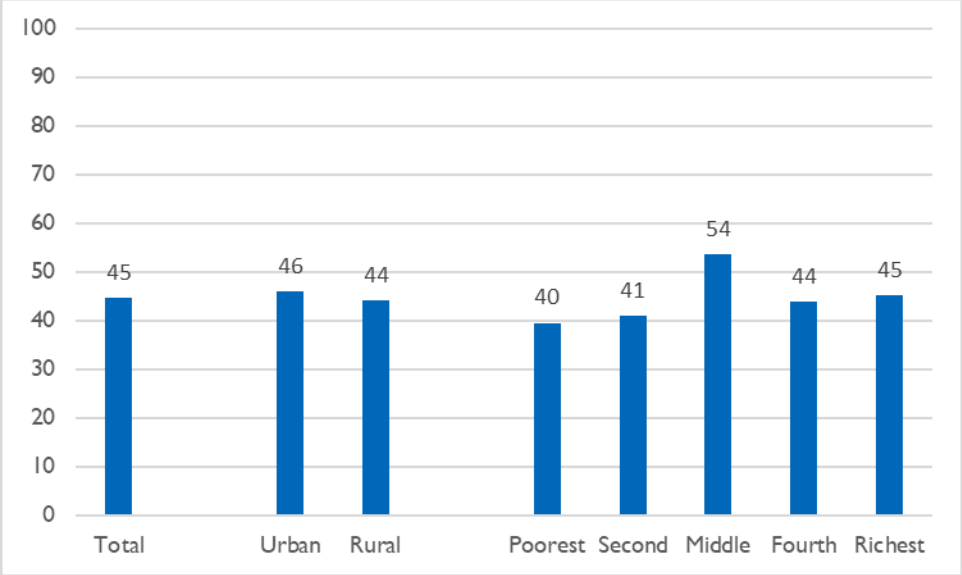
[9] According to UNICEF/WHO, this indicator is currently being reviewed for data validity and should be reviewed with caution.

Figure c5. Disparities in Pneumonia Care-Seeking by Residence and Wealth, Tanzania 2016



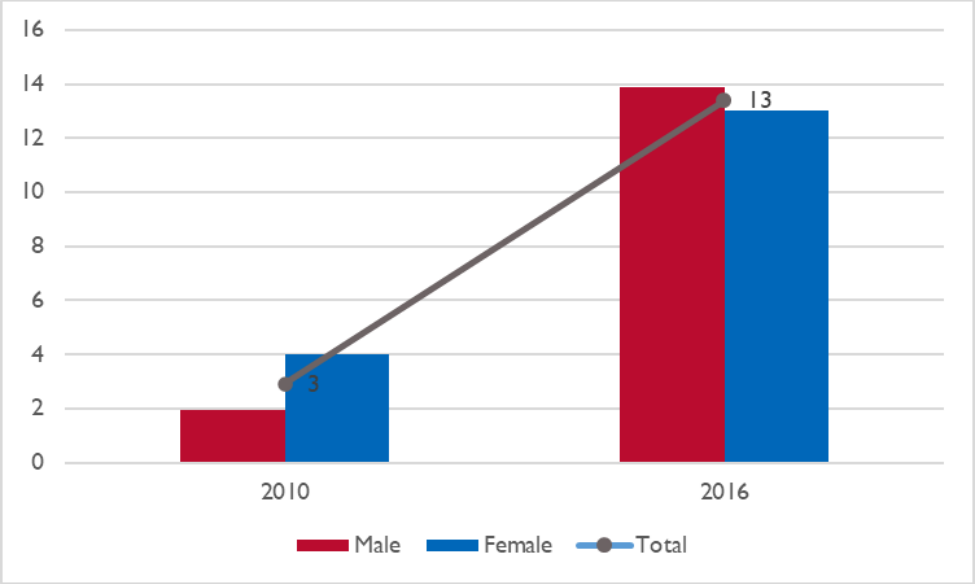
Source: DHS (http://data.unicef.org)

Figure c6. Disparities in Access to ORS, by Residence and Wealth, Tanzania 2016



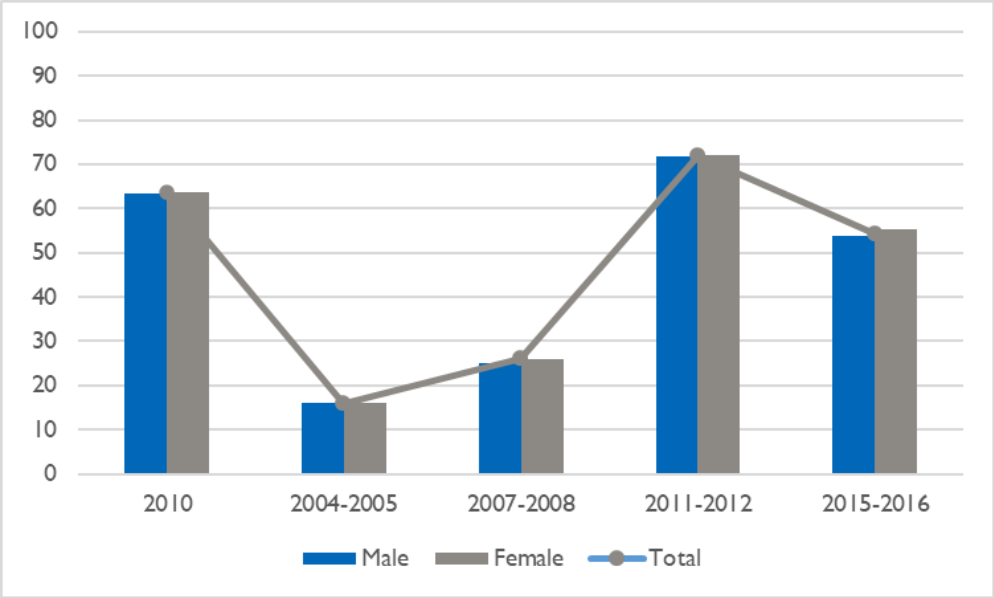
Source: DHS (http://data.unicef.org)

Figure c7. Percentage of Children with Diarrhea Who Were Given ORS and Zinc, Tanzania



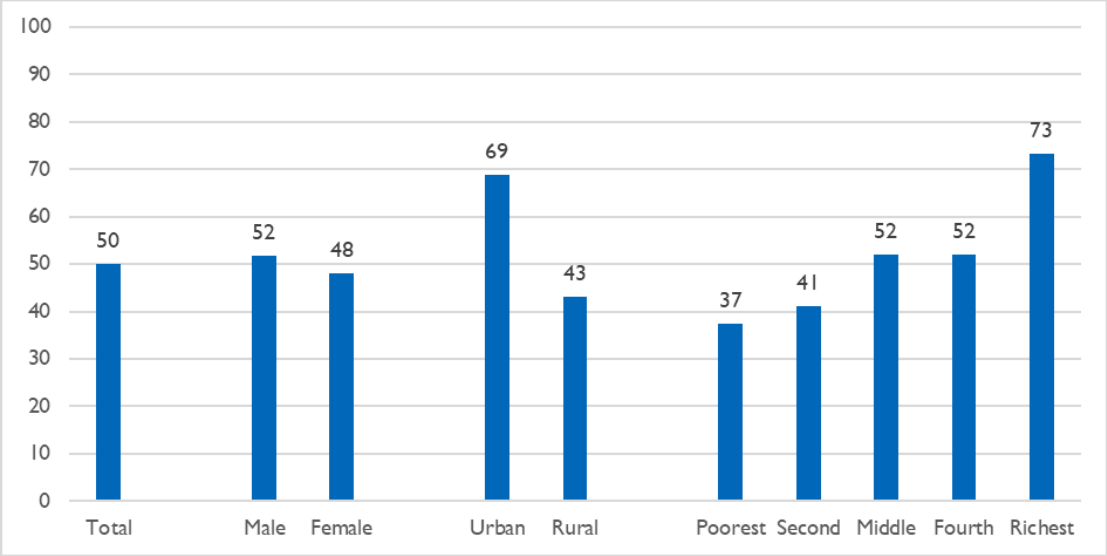
Source: DHS (http://data.unicef.org)

Figure c8. Malaria: Percentage Children under 5 Sleeping under an Insecticide-Treated Net (ITN), by Sex, Tanzania



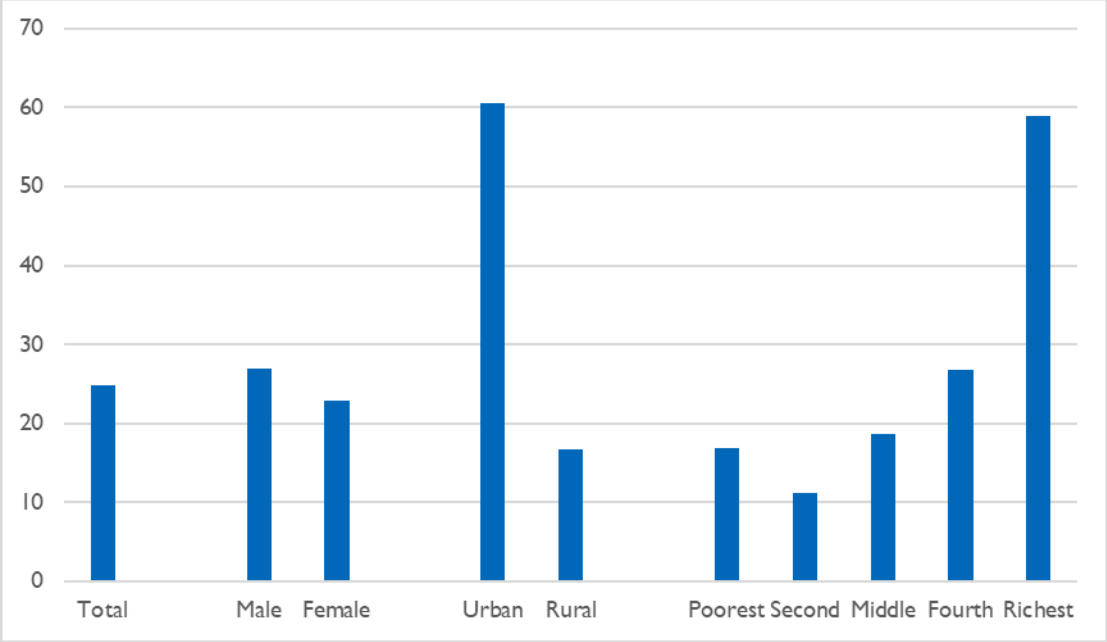
Source: DHS (http://data.unicef.org)

Figure c9. Percentage of Children under 5 with Fever in the Last Two Weeks for Whom Advice or Treatment Was Sought, by Sex, Residence, and Wealth, Tanzania 2016



Source: DHS (http://data.unicef.org)

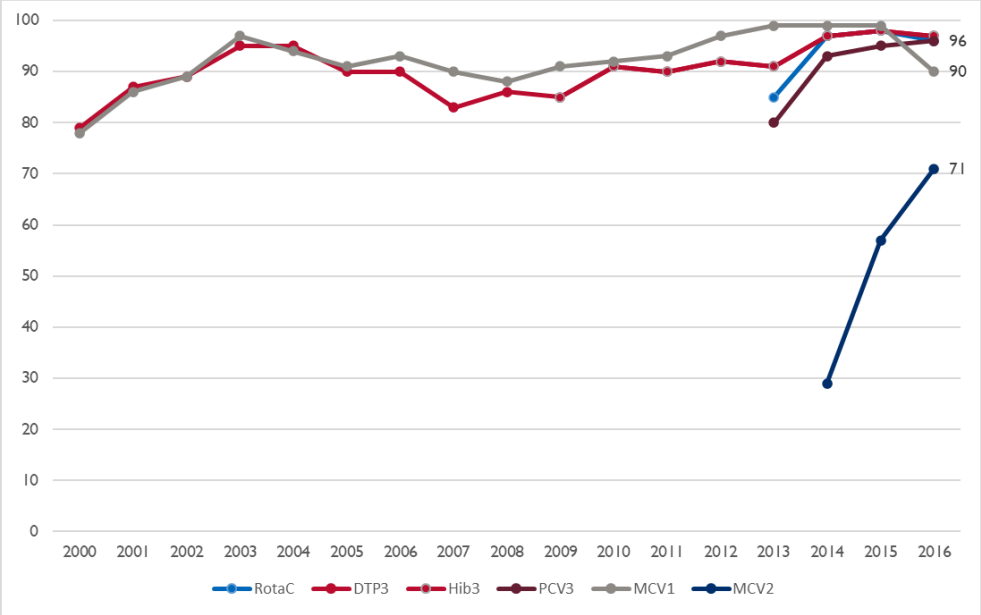
Figure c10. Malaria Diagnostics Usage: Percentage of children 0-59 Months Who Had a Fever in the Last 2 Weeks and Who Had a Finger or Heel Stick for Malaria Testing, Tanzania 2012



Source: DHS (http://data.unicef.org)

Immunization Coverage

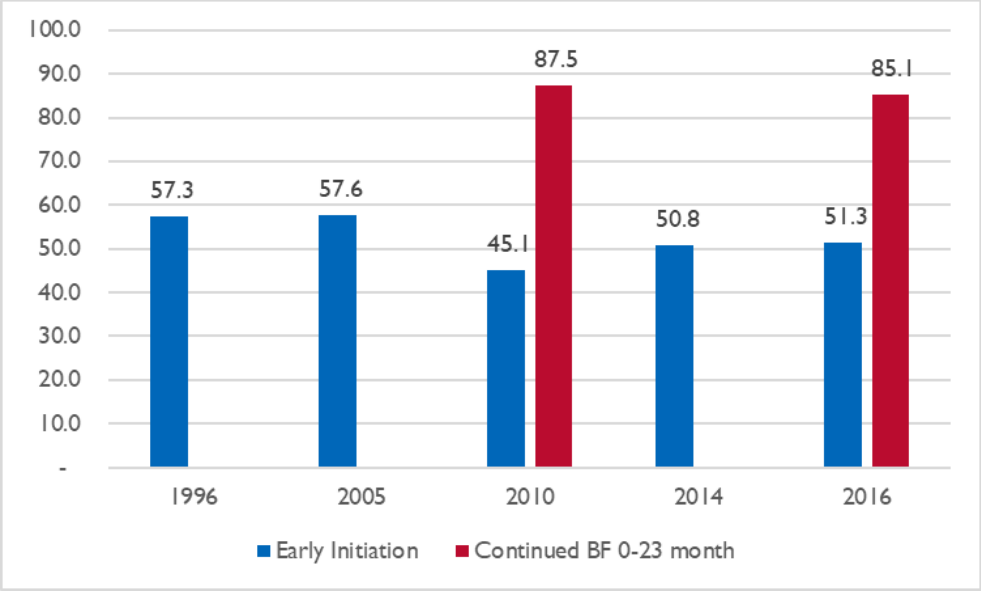
Figure c11. Trends in Immunization Coverage for Selected Vaccines, Tanzania



Source: WHO and UNICEF estimates of national routine immunization coverage, 2016 revision (completed July 2017)

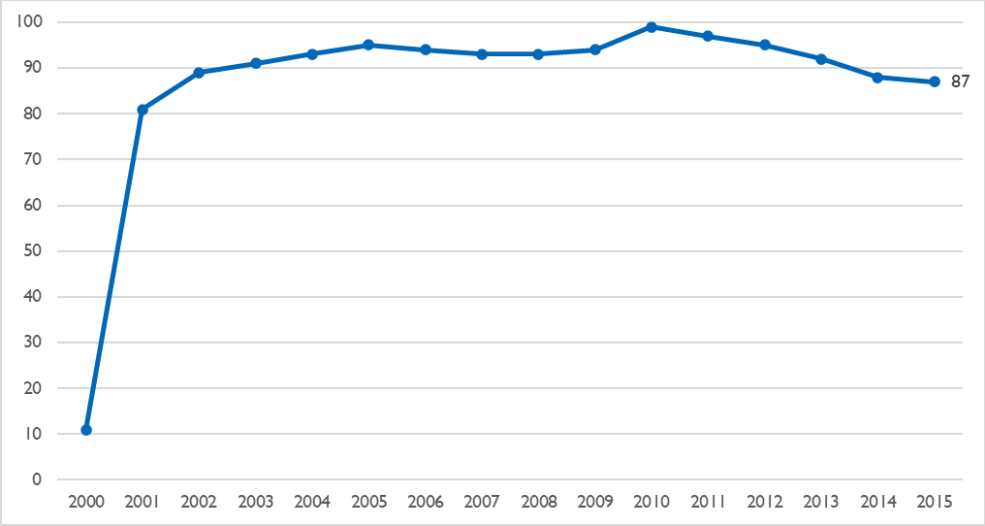
Nutrition Coverage

Figure c12. Early Initiation and Continued Breastfeeding: Percentage of Children Born in the Last 2 Years Who Were Put to the Breast within One Hour of Birth, and Percentage of Children 0–23 Months of Age Who Are Fed Breast Milk



Source: DHS (http://data.unicef.org)

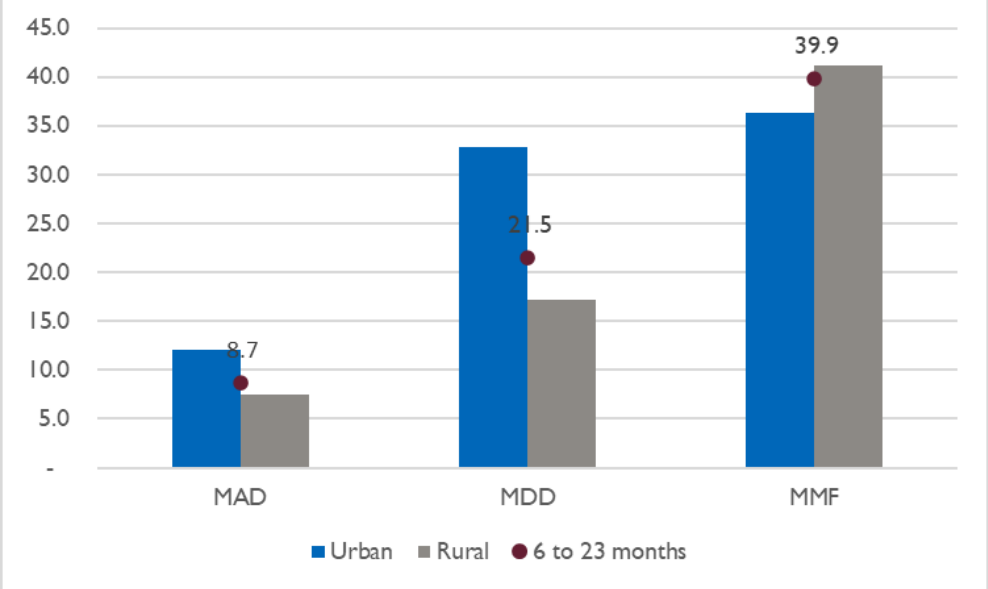
Figure c13. Vitamin A Supplementation: Two Dose Coverage - Proportion of 6 to 59-Month-Olds Receiving Two High-Dose Vitamin A Supplements in a Calendar Year (Lower of Semester 1 and Semester 2 coverage)



Source: UNICEF global databases, 2017, based on administrative reports from countries

Complementary Feeding

Figure c14. Minimum Acceptable Diet, Minimum Diet Diversity, and Minimum Meal Frequency, Tanzania 2016



Source: DHS (http://data.unicef.org)

Definitions:
Minimum acceptable diet: Percentage of 6-23 months old children who received a minimum acceptable diet
Minimum diet diversity (countdown indicator): Percentage of 6-23 months old children who received minimum dietary diversity
Minimum meal frequency: Percentage of 6-23 months old children who received minimum meal frequency

Other Health Issues

HIV

	Estimated number of pregnant women living with HIV, 2016	Estimated early infant diagnosis coverage (%), 2016	Estimated number of children living with HIV, 2016	# of children receiving ART, 2016	Estimated coverage of children receiving ART (%), 2016	Estimated number of children (aged 0-14) who died of AIDS, 2016
Mozambique	120,000	45	200,000	76,000	38	9,200
United Republic of Tanzania	92,000	40	110,000	54,900	48	6,500
Sub-Saharan Africa	1,300,000	44	1,900,000	804,000	42	100,000
Eastern and Southern Africa	970,000	52	1,400,000	688,000	51	59,000
West and Central Africa	330,000	20	540,000	116,000	21	43,000
World	1,400,000	43	2,100,000	919,000	43	120,000

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ANNEX B: DETAILED METHODOLOGY

Child Health Leadership and Networks in Tanzania from 2000 to the Present: Country Perspectives

Final Study Description

USAID CIRCLE Project
October 28, 2018

TABLE OF CONTENTS, DETAILED METHODOLOGY

BACKGROUND AND RATIONALE

WHY CHILD HEALTH?

Childhood mortality rates have decreased significantly over the past 15 years in Tanzania as reported in the 2015 Tanzania Demographic and Health Survey (TDHS). The neonatal mortality rate declined from 40 deaths per 1,000 live births in 1999 to 25 deaths in 2015. Over the same period, the infant and under-5 mortality rates have declined from 99 deaths to 43 deaths per 1000 live births and from 147 to 67 deaths per 1,000 live births, respectively. Tanzania achieved the fifth fastest reduction in under-5 mortality rate among Countdown to 2015 countries, attaining the MDG 4 target with an under-5 mortality rate of 54 deaths per 1000 live births in 2013. However, the targets for maternal and neonatal mortality were not met and neonatal mortality now accounts for nearly 40% of under-5 mortality.

Trends in coverage of the life-saving services that might have contributed to progress varied in this time period. Preventive child health services coverage was high (≥85%) and equitable, but coverage of child curative services was lower and more inequitable (71%). Importantly, facility delivery reached a high of 52% coverage with wide inequities, and family planning coverage was even lower. (46%). Child mortality reductions were associated with large increases in coverage of insecticide-treated nets and vaccination and to general economic growth. The conclusions from the Countdown Case and other studies underscore that focus must continue on addressing unmet need for family planning and gaps in coverage and quality of care at birth, especially in rural areas.

As the country looks towards 2030 and a goal of 25 for under-5 mortality and 12 for neonatal mortality, there is an urgent need to maintain focus on child health and to address the gaps in maternal and neonatal health. With a total fertility rate of 5.2 (TDHS) and the need for new strategies to reach underserved populations, it may be useful to identify and determine how to enhance health sector leadership and stakeholder networks to support the implementation of child health strategies and accelerate progress.

WHY THIS STUDY?

In 2015, USAID commissioned a mapping of global child health leadership to better understand the evolution of child health since 2000, the current network of global stakeholders and leaders, and the potential implications for USAID's future investments in child health. This landscaping exercise explored how the global child health community might strengthen leadership and reposition child health to improve outcomes. To reach the Sustainable Development Goals (SDGs) for 2030, it was strongly recommended that countries be at the center of reframing the future child health agenda and that in-depth country reflections on child health progress, leadership, and the effectiveness of stakeholder networks be more systematically documented.

USAID proposes to conduct a country-focused analysis to begin to complement the global mapping report findings with the perspectives of some country level stakeholders. This follow-on activity will document context and facilitate a deeper understanding of child health leadership, networks, and political commitment for child health at the national level in three USAID priority countries: Mozambique, Tanzania, and Uganda. Findings are intended to contribute to investment, policy, and programmatic decisions and to enhance collaboration of stakeholders in these countries.

RESEARCH QUESTIONS

For the purposes of this study, child health is defined as the health of children from birth to 5 years. Quantitative measures and trends will be drawn from existing published sources. The under-five mortality rate (U5MR), the infant mortality rate, the neonatal mortality rate (NMR), and rates of wasting and stunting will be used to describe overall, impact level change in child health at country level over the past decade or more. Changes in impact are likely the result of improvements in multiple sectors including health, the economy, education and others. Intermediate outcome and output indicators will be used to describe the effects of health programs. Health program component indicators may relate to leadership, stakeholder collaboration, national policy and guidelines, service delivery interventions and approaches, human resources, information use, financing (including donors), and supply logistics.

Change in child health activities and results will be mapped over approximately 15 years starting about the year 2000. This starting point was selected based on shifts in the support of child health at the global level and availability of existing country data on child health resources, strategy, and outcomes such as the timing of health sector five-year plans. The focus will be on the national level for each country and data gathering will be limited to this level. Each country will be considered a separate case study, and all country case studies will be reviewed together to identify similarities and differences in factors that shaped progress in child health.

The aim of the study is to understand the effectiveness of leadership and stakeholder networks in improving child health over the past 15 years in the selected countries. This study will also suggest how these and other drivers of change might be harnessed to advance child health going forward, especially for USAID. More specifically, the study will answer the following questions:

- What strategies were employed to improve child health over time? (Strategies are defined as policies, plans of action, implementation and their results)
- What were the key facilitators and barriers to progress in child health since approximately the year 2000?
- Who were important leaders and organizations in child health in each country and what roles did they play to influence progress and results?

    a. Applying organizational network analysis theory, what were the structure, relationship characteristics, and dynamics of country child health organizations and networks?

b. What role did USAID contributions play in progress in child health, particularly with the Call to Action for Child Survival[10], A Promise Renewed (APR)[11], and Ending Preventable Child and Maternal Death (EPCMD)[12] initiatives?

- Applying a conceptual framework developed by Shiffman and others,[13] what factors shaped the development of child health networks? What was their influence on priorities, policy and results in each country?

As shown in Table 1, the Shiffman framework identifies factors that shape the development and effectiveness of networks in three broad categories including: Issue Characteristics (in this case child health, Network and Actor Features, and the Policy Environment.

Table 1. Network Emergence and Effectiveness

Network emergence and effectiveness are more likely if….	
Issue Characteristics	
Severity	Problem is perceived to have high mortality, morbidity or cost
Tractability	Solutions are perceived to exist and are not controversial
Affected groups	Group is easy to identify and viewed sympathetically
Network and Actor Features	
Leadership	Capable, well connected, respected champions exist
Governance	There are appropriate governing structures able to facilitate collective action
Composition	Diverse actors are involved and well linked (creativity)
Framing strategies	Issue is positioned so that it resonates especially with political elites
Policy Environment	
Allies/opponents	Groups interests are aligned
Funding	Donor funding is available and applied
Norms	It is an issue that many expect will be addressed

- Building on what is learned about leadership and stakeholder networks, what might be done differently by USAID and others to enhance progress on child health over the next 5 to 10 years in the selected countries?

[10] https://www.unicef.org/childsurvival/index_62639 accessed 06_04_2018
[11] https://www.apromiserenewed.org accessed 06_04_2018
[12] https://www.usaid.gov/ActingOnTheCall accessed 06_04_2018
[13] Shiffman, Quissell, Schmitz, Pelletier, et al. A framework on the emergence and effectiveness of global health networks. Oxford University Press: Health Policy and Planning, August 29, 2015.

STUDY DESIGN

SUMMARY OF STUDY METHODS

Methods to be utilized in the country analysis include a desk review and secondary data analysis, in-depth interviews with child health stakeholders at national level, an organizational network analysis (ONA), and facilitated findings reviews. Table 2 illustrates the relationship among methods, research questions, and the type of data collected.

Table 2. Study Methods and Research Questions

Method	Research Questions						
	A Strategies	B Enablers & Barriers	C Call to Action, APR, EPCMD	D Past Leaders, Organizations, Partnerships	E Recent Leaders, Organization networks	F Network Factors (*Shiffman et al.*)	G Way Forward
Desk Review*	✓	✓	✓	✓	✓	✓	
In-depth interviews	✓	✓	✓	✓	✓	✓	✓
Organizational network analysis					✓	✓	✓
Group reviews	✓	✓		✓	✓	✓	✓

*Data for desk review will not be collected from participants in study countries or globally, but will be collected from published and gray literature reports, documents, and websites.

CHILD HEALTH TRACER INTERVENTIONS

The study will document the evolution of child health programs and results in terms of strategy, leadership, and stakeholder network effectiveness. Key child health interventions will be "traced" in greater detail over time in each country to document if and how these factors affected changes in child health program performance. These topics (also referred to as "tracer interventions") include:

- Integrated Management of Child Illness (IMCI) - integrated Community Case Management (iCCM)
- Child Immunization
- Complementary feeding of young children
- Newborn Health (Kangaroo Mother Care [KMC], management of Possible Serious Bacterial Infection [PSBI], milestones from Every Newborn Action Plans)[14]

[14]The indicators available for tracking newborn health are not particularly robust hence more recently developed indicators for KMC and PSBI case management will be sought. If these are not available, country-reported ENAP indicators will be used.

The tracer interventions are not mutually exclusive; interactions within and between topics are expected.

IMCI and iCCM were chosen because they are the most common approaches used for integrated service delivery for child illness especially in sub-Saharan Africa (SSA), and an extensive review has recently been completed. Newborn health was chosen because NMR has been increasing rapidly as a proportion of U5MR in countries and consequently greater attention has been paid to it over the period of interest. Child immunization has been the most effective health intervention for reduction of child mortality since the late 1980s and is primarily provided through government service. Nutrition expands the scope of the review to include the most important underlying condition for child survival and because programs are often managed through different divisions and across sectors. This will be further focused on complementary feeding of children under 2 years.

COUNTRY SELECTION

Among USAID focus countries, specific study countries were selected based on rate of child mortality reduction, political stability, domestic resources for health, PMI presence, GFF engagement, health systems strength, and equity. Other selection criteria included willingness and feasibility of Mission and MOH participation in the study given level of effort needed within a specified time frame. Resources limited the number of countries that might have been included and feasibility of participation further limited the geographic scope and range of health system capabilities among countries. Thus, findings will be primarily applicable to each country. As noted in Table 3, the three countries selected include Mozambique, Tanzania, and Uganda.

Table 3. Country Selection Criteria

Country	2017 MCH Funding in USD (million)	Domestic Resources for health (% of GDP)	GFF	PMI	Political Stability	Health System Service capacity score assigned by USAID	Equity index	Annual Under Five Mortality Reduction Rate	Gavi
Mozambique	18,000	13%	first wave	yes	Stable	Medium	Low	5.6%	yes in 2018
Tanzania	16,000	17%	first wave	yes	More stable	Medium	Low	5.3%	yes in 2018
Uganda	16,000	13%	first wave	yes	Stable	Medium	Medium	7.3%	yes in 2018

ETHICAL CONSIDERATIONS

The study protocol will be submitted to institutional review boards (IRBs) in the United States, Tanzania, Uganda and Mozambique for research ethics review according to local requirements. Qualitative in-depth interviews, organizational network analysis participation, and group meeting participation will be voluntary and confidential. All interviews will begin with a standard, written informed consent process. Interview recordings, transcripts, coded interviews, and any qualitative written submissions will be stored by a unique code rather than by individual information and will be

password protected. Any illustrative quotes used in reports will not be identifiable by person or by organization, and written permission for use will be obtained beforehand. Raw qualitative data will not be submitted to public databases nor to the funder and will be destroyed within three years after reports are published.

CULTURAL AND LANGUAGE CONSIDERATIONS

Interviews and meetings will be conducted in English in Tanzania and Uganda, and in Portuguese in Mozambique. All respondents in Mozambique will have worked at the national level where the official language used is Portuguese. For study instruments, transcripts, and reports, English will be used in Tanzania and Uganda. For Mozambique, study instruments will be translated from English to Portuguese, translated back and finalized for use. Transcripts will be entered in Portuguese and translated into English for coding and analysis. Reports will be written in both English and Portuguese.

In-depth interviews will be conducted at a convenient time and place for the respondent, in a quiet, private location to ensure confidentiality.

STUDY METHODOLOGY

DESK REVIEW

The desk review is the first phase in the larger study. Preliminary information related to child health outcomes and associated problems will be collected from peer-reviewed literature as well as global and local reports and policy documents to understand and better characterize the evolution and status of child health. Desk review data will not be collected from study participants in-country or globally. The collected data will include historical trends of mortality rates and coverage of key related interventions, as well as information describing barriers and facilitators to developing, implementing, and scaling-up child health interventions in the context of government health systems and other important sources of health care provision. Table 4 summarizes the tools to be used to collect and organize desk review data.

Table 4. Desk Review Tool Summary

Name and Purpose	Data Source	Data Collection Tool
Child Health Trends and Indicators: Develop an epidemiologic and demographic profile of child health globally and for each country and for comparison	• Peer-reviewed publications • Global and national policy documents and reports • Partnership for Maternal, Newborn, Child Health (PMNCH) Millennium Development Goal (MDG) success factor studies, Countdown 2015 case studies • Official MDG reports • IMCI Grand Convergence review • Secondary quantitative data sources such as Demographic and Health	Attachment A; Attachment B, Worksheets No. 1 and 2

Name and Purpose	Data Source	Data Collection Tool
	Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS) • Demographic data from http://www.census.gov/population/international/ • U5MR and cause of death http://childmortality.org • World Development Indicators	
Country Health Systems Profile: Develop a profile specific to major child health programs for each country and the platforms that were/are used to deliver them (e.g. community health workers, decentralized district management platforms, etc.)	• National Demographic data • National health plans and policies • National health accounts • Peer-reviewed or grey literature analyses using DHS; Service Provision Assessment (SPA) surveys; Service Delivery Indicators (World Bank) • UNICEF RMNCH Landscape Analysis • Countdown 2030 database	Attachment B: Worksheet No. 3
Tracer Interventions Process Timelines for each country: For IMCI-iCCM, Child Immunization, Complementary Feeding, and Newborn Health, map strategies, including global initiatives and country level policies by year, outcome domain; partners involved, budget; and results of monitoring and impact evaluations. Note barriers and enablers to progress and document effects of the Call to Action, APR, and EPCMD.	• USAID child health websites, national and country level offices • National health plans and policies • Program and health sector evaluations • DHS • MICS • EQUIST: www.equist.info	Attachment B: Worksheet No. 4
Stakeholder roles and actions for each country: Map key stakeholders and determine their role, investments and/or actions, and agendas in relation to child health generally, and for tracer interventions	• Global and national policy documents and reports • Websites of different organizations such as governments, partners, and foundations • USAID country Mission documents	Attachment B, Worksheet No. 5
Overall Child Health Program Process Timelines:	• Peer-reviewed literature • USAID child health strategies and reports	Attachment B, Worksheets No. 6a-d

Name and Purpose	Data Source	Data Collection Tool
To summarize and document barriers and facilitators of progress for child health overall, including the political economy of child health.	• Countdown case studies • PMNCH success factors studies • MOH annual reports	

Data collection and analysis for each component of the desk review will occur concurrently and iteratively. Citations for documents reviewed will be stored in the data collection worksheet (Attachment B: Worksheet No. 0) and Endnote, a reference manager software.

IN-DEPTH INTERVIEWS

The purpose of the in-depth interviews (IDIs) is to seek expert and experienced opinion on what contributed to or impeded momentum and achievement of child health results in each country since around the year 2000. This includes what and how key strategies worked (or didn't), the role of leaders and leadership processes, and how factors such as governance and coordination, the policy environment, and the framing of child health influenced progress. Open ended questions and probes will be used to document evidence of progress related to these contributors. Progress may be demonstrated by the promulgation of policies, priority setting, resource allocation, harmonization of effort, critical systems performance, and/or coverage of effective interventions. In addition, respondents will be asked to reflect on future opportunities and the most effective way forward from both organizational and collaboration perspectives.

Approximately 15 to 20 semi-structured IDIs will be conducted in-country to document child health program evolution and results from approximately 2000 to the present. Respondents will be selected based on depth of knowledge and experience with child health and its components over this period and will represent a range of organizational affiliations, qualifications, and specific areas of expertise.

Table 5. Types of Respondents

Types of Organizational Affiliation	Sample Areas of Expertise	Sample Qualifications
Country government (e.g. MOH, MOF)	IMCI-iCCM Immunization Child nutrition Newborn health Maternal/reproductive health Health systems Supply management Policy and planning HR/Training Information systems	Doctor, health worker Economist Program director Program manager Researcher Donor Business manager Advocate
Multilaterals (e.g. UNICEF, WHO)		
Global Partnerships (e.g. Gavi, GF)		
Bilateral donors (e.g. USAID, DFID)		
Foundations (e.g. Gates, CIFF)		
Academic Institutions		
Non-Governmental Organizations		
Faith-based Organizations (FBOs)		
Professional Associations		
Private Sector (e.g. drug suppliers)		

Potential respondents will be identified through the desk review and in consultation with the USAID Mission and technical leadership in each country. One master list of potential respondents will be

created for the IDIs and for the ONA (described below). The initial list for the IDIs and ONA interviews will be reviewed and prioritized into first-tier respondents (highly knowledgeable/experienced in child health along the time frame of interest) and second-tier respondents (to balance input, fill gaps - as time allows). In addition, any individuals or important actors suggested by respondents during interviews will be noted and continuously reviewed. Additional interviews may be done with those identified, if further detail or clarification is needed, if they fill significant gaps in time-frame, content or representativeness, or if they contribute to triangulation of key information. Ultimately the master list will be finalized to list only those scheduled for interviews for the IDIs and for the ONA. Code numbers will be assigned to each name for use in identifying respondents on the data collection instruments, recordings, and transcripts.

The interview instrument (See Annex C) is designed based on the study questions and experience with the global child health leadership study, and will be refined by desk review findings, USAID Mission, and local researcher review.

ORGANIZATIONAL NETWORK ANALYSIS (ONA)

In recent years, there has been an effort to examine how social and organizational networks impact health systems and health outcomes.[15] Organizational Network Analysis is a methodology developed to study how individuals, communities, organizations, and other entities connect and interact with one another.[16] It uses quantitative methods and associated visualization software to examine the relationship between agents (people and organizations) to describe the pattern of relationships in the whole network and positions of organizations in the network to understand system processes and aspects of performance. Through this process, ONA uncovers the patterns of complex interactions that occur within and between different types of institutions, organizations and government departments.

The ONA for this study will document the recent relationships and positions of organizations working on child health. It will help assess the extent to which certain organizations have leveraged their positions and forged successful partnerships and networks to influence policies, plans, and programs in child health. Additional areas of analysis include establishing the key organizations that are: a) influential, b) sought for the latest evidence, and c) recognized leaders that can bring the child health community together to discuss controversial topics and build common goals and directions for the future.

The ONA methodology will contribute to the understanding of the top "network and actor features." This includes identification of key leadership organizations based on confirmed relationships in the child health network, the overall density of relationships, the extent to which there are isolated sub-groups or clusters of organizations, and how they are linked into the overall network through "bridging" ties or organizations that provide important pathways for communication and coordination.

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[15] For a review of these efforts, see Varda, D., Shoup, J.A., and Miller, S. 2012. A systematic review of collaboration and network research in the Public Affairs literature: Implications for public health practice and research. *American Journal of Public Health*, 102: 564—571; Friedman, S.R. and Aral, S. 2001. Social networks, risk-potential networks, health, and disease. *Journal of Urban Health*: Bulletin of the New York Academy of Medicine, 78:411-418.
[16] Valente, T.W., Coronges, KA, Stevens, GD, and Cousineau, MR. 2008. Collaboration and competition in a children's health initiative coalition: A network analysis. Evaluation and Program Planning, 31:392-402.

The ONA will determine how organizations are interacting and communicating around key themes of interest, the intensity of the interaction and the relationship quality. This will contribute to identifying opportunities and modalities for more effective stakeholder engagement and thus better child health results in the future.

In order to construct an accurate picture of organizational relationships, we have selected a recall period of 2015, or post MDGs until the present. (The desk review and qualitative survey will explore the longer historical trajectory of child health progress beginning around 2000.)

The basic starting point of a network definition is that it is viewed as a group of three or more organizations connected in ways that facilitate the achievement of a common goal.[17] Organizations and respondents will be identified through the desk review process, consultation with key informants in selected countries, and with USAID Missions. The list is likely to include: national government (e.g., MOH, Ministry of Social Welfare); donors or development partners (e.g. USAID, UNICEF, WHO); financing partners (e.g. World Bank, GFF); implementing partners; private sector networks or private health providers; NGOs; FBOs; professional associations; and research institutions.

The master list of potential organizations and respondents as described above will also include respondents for the ONA. To get a more accurate picture of relationships, it may be necessary to seek out essential individuals who were engaged with a particular organization during the time period of interest but have either retired or have joined another organization.

The ONA questionnaire contains characteristics of the respondent and the organization, followed by a table that lists all the organizations in the study and notes whether a relationship exists (see Annex E). If a relationship exists, a series of questions are asked about the type of working relationship related to child health since 2015. These relationships are grouped into the categories of a) strategies, policies, plans, or legislation; b) capacity development; c) program implementation; and d) accountability mechanisms. These questions may be adapted to reflect individual country context.

Further questions in the survey explore the intensity of the relationship between the respondent organization and every other organization with which they have a relationship. This is organized by increasing levels of intensity: 1) communication - interactions as necessary to inform one another and/or access resources; 2) coordination - interactions to exchange ideas, build consensus, and ensure that overlap is minimized; 3) collaboration - having an ongoing, reciprocal working relationship.

The last area assesses the quality of the relationship between organizations as trust is a central component of a functional network. Relationship quality is measured by a 5-point Likert scale: poor, fair, good, very good, or excellent. Respondents are also asked to identify the five top organizations that have been: a) most influential in child health since 2015, b) who they would turn to for the latest research and evidence, and c) which are best suited to convening the child health community to discuss important and/or controversial issues in developing child health strategies, policies and programs.

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[17] Provan, Keith, Fish, Amy and Sydow, Joerg, Interorganizational Networks at the Network Level: A review of the Empirical Literature on Whole Networks, *Journal of Management* 2007 33:479-516.

Table 6. Definitions of ONA Measures

Measure	Definition
Degree centrality	Calculated by counting the number of adjacent links to or from an organization or a person. It was conceptualized by Freeman, 1979, as a measure of activity and it reflects the potential power of having direct relationships. These direct links reduce the reliance on intermediaries to access information or resources. The assumption is that more connections are better than fewer connections.
Betweenness centrality	Measures the extent to which organizations or individuals fall between pairs of other organizations or individuals on the shortest paths (geodesics) connecting them. It represents potential mediation or flow of information or resources between organizations in the network. It is used to assess power, as an organization may control the flow of information and potential resources, thereby increasing dependence of others who are not directly connected in the network.
Multiplexity	Describes multiple relationships among the same set of organizations. In this study four types of binary relationships are specified: 1) developing key strategies, policies, and legislation; 2) building capacity; 3) developing and implementing accountability mechanisms; and 4) implementing child health programs
Intensity	Describes the level of interaction between different organizations or nodes. Two measures of levels of intensity are used: frequency of interaction and type of interaction (communication, coordination or collaboration).
Relationship quality	Reflects how well a relationship fulfills expectations and needs of the involved parties and is a significant measure of relationship strength. Although no consensus has been reached on its dimensionality, studies consistently suggest trust and commitment as the key indicators of relationship quality. For this study, relationship quality is measured using a 5-point Likert scale: poor, fair, good, very good or excellent
Centralization	An expression of how tightly the network structure is organized around its most central point. The general procedure involved in any measure of graph centralization is to look at the differences between the centrality scores of the most central point and those of all other points. Centralization, then, is the ratio of the actual sum of differences to the maximum possible sum of differences.
Density	Defined as the sum of the ties divided by the number of possible ties (i.e. the ratio of all tie strength that is actually present to the number of possible ties). The density of a network may give us insights into such the speed at which information diffuses among the nodes and the extent to which organizations have high levels of social capital or constraint.

In-person interviews will be required for the ONA. In some instances, respondents for the IDIs and the ONA will be the same. Because it may lengthen the time requested of the respondent by 30 to 45 minutes, these respondents will be asked if this is feasible and if so, whether a longer, one-sitting interview or a follow up interview would be preferred. In a one-sitting interview, the respondent will be interviewed using the IDI and the ONA instruments. If a follow-up interview is preferred, the IDI will be done first, followed by the ONA interview as soon as possible afterward. In other instances, the

respondent may be a different person than for the in-depth interview, but from the same organization. In this case, the person will be invited separately. Separate informed consent will also be obtained for the ONA component.

GROUP REVIEW OF DATA AND FINDINGS

Study findings will be drawn from the three data collection methods of desk review, in-depth interviews, and the ONA. To provide a check on early versions of key observations and findings within each country, a small group of key informants will be invited to participate in a confidential, facilitated meeting to review summary statements, to clarify their context, language, and accuracy, to identify any gaps in information, and recommend any further data checking or analysis as needed. The group review will take place after IDIs and ONA interviews are completed. At the simplest level, this process is intended to document "did we hear what we thought we heard?" This group meeting will also be used to characterize the future context for child health in country (5 to 10 years) and to identify opportunities for consideration of future policy and program directions based on early findings.

Participation in these country-level group meetings will be voluntary and written informed consent will be obtained beforehand. The meetings will not be recorded. Content notes of meetings will be kept without attribution to individual participants, and information will be summarized and synthesized and fed into the overall final report. There will not be separate reports, and notes will be destroyed within three years after the final report is published.

After the first draft country case study findings and conclusions have been completed, a meeting of local and international researchers from all three countries and possibly other child health thought leaders in sub-Saharan Africa will be held to compare and contrast findings and conclusions. The main purpose of this meeting will be to help country teams consider findings from a broader perspective and to identify any useful learning that may be shared among countries as they apply study results. For this meeting, report summaries only will be shared. Raw qualitative data, personally or organizationally identifiable data, and country group meeting notes from countries will not be shared. Participants in the meeting will not be individually quoted.

ANALYSIS

Desk review information will be presented in spreadsheets and timelines and separate reports prepared for each country. Quantitative information will be assembled in standard graphs and formats for each country for use during the facilitated reviews and overall analysis. Qualitative information, largely from other studies, will be extracted by questionnaire themes and factors and combined with IDI coded information during the analysis phase.

In-depth interviews will be recorded with permission, transcribed, coded, and excerpted in Dedoose, a web-based qualitative data analysis platform.[18] Interviews from Mozambique will be in Portuguese,

[18]Dedoose Version 8.0.35, web application for managing, analyzing, and presenting qualitative and mixed method research data (2018). Los Angeles, CA: SocioCultural Research Consultants, LLC. www.dedoose.com.

transcribed, and translated before coding. First-level coding will be aligned with the questionnaire and include child health enablers and barriers, strategy themes including the tracer interventions, leadership, coordination, effects of the specific global initiatives, and future directions. Second-level coding will focus on identifying drivers of policy and priority for child health, including factors from the Shiffman et al. Framework and others. For example, these latter codes could include:

(Network and Actor features)

- Leadership in child health
  - Strong leader or champion
  - Weak or no leadership
- Governance
  - Statement of effective group action or coordination (past or present)
  - Statement of group inaction, weak coordination or lack of leading institution (past or present)
- Composition
  - Diverse interests among groups
  - Similar interests among groups
  - CSOs role
- Framing Strategies - public positioning of child health issue

(Policy environment)

- Level of political commitment (past and present)
  - Group aligned with CH
  - Opponent or competes with CH
- Funding for child health
- Norms and social values for CH

(Issue characteristics)

- Perception of severity of child health problems
- Perceptions of effectiveness of solutions or interventions for child health
- Importance of children as an affected group in need

Information will be excerpted by first- and second-level codes and summarized across interviews, comparing by respondent type and time frame. The information will be assembled together with desk review findings into process chronologies using the tracer interventions and trends in child health results.

The ONA data will be analyzed using UCINet software and visualization of network plots will be developed using NetDraw. We will use a confirmation process to measure relationships. The criteria indicate that both organizations need to acknowledge the relationship for the relationship to be listed in the confirmed results. The ranking of intensity and quality of relationship will use the lowest level identified if the organizations list different levels of engagement. We will use "incoming ties" as the metric for analyzing and to develop plots for the three nominations for organizations: most influential,

resource for new knowledge or research, and best coordinator. Standard network measures listed in Table 6 will be used in combination with desk review and IDIs to address the study objectives.

The in-depth interviews will provide historical information on stakeholders, stakeholder engagement, and coordination. The formal ONA will be done to more explicitly characterize connections and interactions over the recent past. The ONA information will be used to help shape conclusions and recommendations for future stakeholder engagement.

REPORTING

Study findings will be disseminated in reports and presentations to USAID, country stakeholders, and global stakeholders, and study participants (see Table 7). The main product will be country-specific case study reports and presentations including findings from the desk review, IDIs, and the ONA. A cross country report and overall slide deck will also be produced.

Table 7. Reports and Audiences

Focus	Audiences	Products
USAID	Country USAID Missions MNCH Regional Bureaus PCMD Team	• Country-specific case study reports • Slide deck • Cross country report • Dissemination presentations
Country Stakeholders	Interviewees	• Country specific case study executive summaries
	Country government and core stakeholder organizations	• Country-specific case study reports • Dissemination presentation
Global Stakeholders	Child Health Task Force Steering Committee	• Presentation slide deck • Country-specific reports • Cross country report

ANNEX C: INSTRUMENTS

Child Health Country Perspectives Study
In-depth Interview Guide Draft
Note: Adjust time period to reflect start year chosen for this country

Date:

Code Number of Respondent:

Main areas of expertise:

Interviewer:

BACKGROUND AND CONSENT

Thank you very much for setting aside time to talk with me today.

The USAID-funded CIRCLE Project is exploring progress on child health in this country by exploring the effects of leadership, governance, and networks on programs and outcomes over the past 10-15 years. You are being interviewed because you and your organization are important stakeholders in the child health community. This is a confidential interview that will take about an hour. First, I would like to review the consent form with you.

[Allow time for the respondent to read the informed consent form. Review the contents from all sections of the informed consent form with the respondent. (See attached form). Ask if he/she understands and agrees to continue. Ask him/her to sign the form, put it in the secure bag and provide one copy to the respondent.]

To make sure I capture all your feedback, is it all right with you if I record this interview?

Before I begin, do you have any questions?

INTRODUCTION

We would like to understand your perspective of the major strategies and events that helped or constrained achieving improved child health in [country]. For the purposes of this study, we would like to focus on approximately the past 15 years (since ~2000) and on all children under five years, including newborns.

1. **In the past 15 years, how have you engaged in child health?** *(Probe: any areas of specialization?)*

    a. **Which organizations have you worked for during this time?**

2. **What do you think were the most important successes for child health here?**

    a. **What were the biggest disappointments?** *(Probe: What were missed opportunities, if any?)*

3. **Were there any contextual changes that contributed to the success or failure of child health outcomes here? If so, what were they?** *(Probe: economic, political, development policy changes?)*

EVENTS AND STRATEGIES

Instruction to interviewer: Ask questions 3 and 4 for child health generally, then tailoring the topics to this respondent, ask 3 and 4 for specific examples (IMCI-iCCM, immunization, newborn health or nutrition-complementary feeding). Ensure that present day is included.

4. **Reflecting over the time period from 2000 to now, what were the major strategies and events that advanced the child health agenda and helped achieve results?**

5. **What were the major barriers or bottlenecks that critically challenged progress?**

6. **Were there external global or regional initiatives or situations that enabled progress in child health? If so, what were they?** *(Probe: EWEC, IMCI, PEI, PMI, HIV/Pepfar, SSA regional or AU initiatives.)*

7. **Were there external situations that created barriers or bottlenecks that challenged progress in child health? If so, what were they?**

If the Call to Action, APR, and/or EPCMD were active in this country, ask the following question.

8. **What did the Call to Action, APR, and/or EPCMD do in this country?**

    a. **How did [each] influence progress?** *(Probe: enabling and inhibiting)*

    b. **How would progress have been different if [each] had not been implemented here?**

LEADERS AND STAKEHOLDERS

9. **Who were important leaders (people in this country) that advanced the child health agenda?** *(Probe: nationals and where they sat)*

    a. **What did [leader] do that was important?**

10. **Were there any leaders outside the country that had an important effect here? If so, who were they and what did they do? (***Probe SSA and neighboring countries)*

11. **Who were leading organizations in earlier years in child health?**

    a. **What did they do? How were they influential?** *(Probe: what did they do to support the tracer interventions – IMCI-iCCM, child immunization, complementary feeding, newborn health?)*

12. How did the key stakeholders for child health work together? *(Probe: technical working groups, strategy development/review groups, ICCs, Newborn health, nutrition groups, CCMs, NGO coordinating groups)*

   a. **How effective was this coordination?** *(Probe for changes over time periods)*

13. How have stakeholders and their influence changed from [for each country identify time clusters around background, policy and program turning points and ask about each cluster]?

FACTORS

Instructions to interviewer for #14: Use the key strategies or events reported by the respondent in question 4. For strategy 'x'…

14. How did the *[strategy/event]* affect political commitment for child health? *(Probe for what affected priorities, policies/programs, resources)*

15. How would you describe country political commitment to child health now and in the context of Sustainable Development Goals? *(Probe: How is it prioritized relative to other health issues)*

   a. **Why is it at this level?**

   b. **What needs to be done to raise political commitment to child health now?**

THE FUTURE

16. What is your vision of success for child health 10 years from now?

17. What are the three most important things that should be done to more rapidly achieve that vision?

18. How would you strengthen the collaboration of organizations, groups, and partnerships to get these things done?

19. Is there anything else you would like to add? To ask us?

Thank you for your time.

Child Health Country Perspectives Study
Organizational Network Analysis Survey

BACKGROUND

1) **Name of your primary organization:** (*Insert dropdown menu)*
_____

2) **What is your position/job title?**
_____
   a. Head of Office
   b. Technical Director/Advisor
   c. Program manager/implementer
   d. Monitoring and Evaluation
   e. Researcher
   f. Any other_____(specify)

3) **How many years have you been in your position?**
   a. Less than 1 year
   b. 1-2 years
   c. 3-5 years
   d. 6-9 years
   e. 10+ years

4) **How many years have you worked with your organization?**
   a. Less than 1 year
   b. 1-2 years
   c. 3-5 years
   d. 6-9 years
   e. 10+ years

5) **Do you work full time or part time (less than 25 hrs. a week)?**
   a. Full time (25 hours or more per week)
   b. Part-time (less than 25 hours per week)

6) **How would you categorize your organization?**
   a. International NGO/PVO (has activities in more than one country)
   b. Local/national NGO or CSO (does not have activities outside the country)
   c. UN Agency
   d. Multilateral agency (World Bank, ADB, etc.)
   e. Bilateral agency (e.g. DfID, CIDA, NORAD, USAID, etc.)
   f. Academic/research institution
   g. Intergovernmental agency
   h. Professional association
   i. Network
   j. Project
   k. Media, newspaper, communications
   l. Consulting firm
   m. Other_____ (specify)

7) **What is the approximate number of full-time equivalent employees in your organization working in your country?**

8) **Overall, how important is improving the child health to the overall mission of your organization? (Please use a scale ranging from 1=very little importance to 5=great importance)**

9) **Please estimate the percent of your organization's work activities that are related to child health:**
   a. No activities related to child health directly
   b. 1-24%
   c. 25-49%
   d. 50-74%
   e. 75-100%

10) **[Excluding those who responded (a) to Q10]: What areas of child health does your organization work on? *Check all that apply***
   a. Breastfeeding
   b. Immunizations
   c. Complementary feeding
   d. Essential Newborn Care
   e. Prevention and treatment of childhood illnesses
   f. Prevention and control of micronutrient deficiencies
   g. Treatment of moderate or severe acute malnutrition
   h. Growth monitoring and promotion
   i. Prenatal care
   j. Post-natal care
   k. Routine child health information systems and reporting
   l. Child health surveys, assessments and surveillance
   m. Food security
   n. Water, sanitation and hygiene
   o. Early childhood development
   p. Other [please list]

11) **Does your organization engage in the following activities? *Please answer Yes or No***
   a. Policy dialogue and advocacy
   b. Program strategies/design
   c. Planning and budgeting
   d. Coordination
   e. Social and behavior change
   f. Service delivery/program implementation
   g. Scaling-up implementation
   h. Providing technical advice and expertise
   i. Capacity development/training
   j. Quality assurance
   k. Accountability and governance mechanisms
   l. Evidence generation, including evaluations, studies and research
   m. Knowledge management
   n. Support to your organization's field offices

o. Other activity (child health related) please specify

12) **Are there other organizations that you also currently work for or represent?**
   a. Yes
   b. No

13a. If yes, what are they? (List up to 2 responses)
1) _____
2) _____

ORGANIZATIONAL NETWORK ANALYSIS

In this section, we would like to know about the relationships you have had in the recent past with organizations. The organizations are presented along with a series of questions about different aspects of your how you are connected.

First, we would like to know whether your organization has a **relationship with another named organization or agency in *Column 2*. *If there is no relationship or if it's your own organization, then you can skip to the next row and do not answer any further questions in columns 3-9 for that organization.*** At the end, please enter up to five additional organizations with whom you interact and the types of linkages you have with them, if it's applicable.

Columns 3 relates to frequency of contact for any reason **since 2015, the end of the MDG era** with the named organization.

Columns 4-7 relate to the types of activities that you may have worked on with each organization **since 2015, the end of the MDG period.**

Column 8 refers to the highest level of intensity of interaction with an organization.
The options are: 1=**Communication** (interaction as necessary to inform others or to check on specific issues), 2=**Coordination** (moderate-intensity interaction to share new ideas, ensure that duplication/overlap is minimized, etc.), 3=C**ollaboration** (a close, on-going, reciprocal, working relationship); Only one option can be selected that reflects the highest level of connectivity.

Column 9 asks you to identify the overall quality of the relationship with a particular organization. (The choices are: 1= Poor; 2=Fair; 3= Good; 4=Very Good or Excellent)

Recent Relationship with Organizations

Column 1: Organization	Columns 2: Existence of relationship	Column 3: Frequency of contact	Column 4: Type of working relationship - a	Column 5: Type of working relationship - b	Column 6: Type of working relationship -c	Column 7: Type of working relationship – d	Column 8: Intensity of working relationship	Column 9: Quality of relationship
(1) Name of Organization	(2) Does your organization have a **relationship** with _____? **0=No 1=Yes 2=My own organization**	(3) About how often has your organization met with _____ (in person or phone/skype, etc.) for any reason **since 2015**? **0=Have not met 1=At least monthly 2= Quarterly (every 3 months) 3=Twice a year 4=Once a year 5=Only Once**	(4) Has your organization worked with ____ on child health related **strategies, policies, plans, or legislation since 2015**? **0=No 1= Yes**	(5) Has your organization worked with ____ on child health related **capacity development since 2015**? **0=No 1= Yes**	(6) Has your organization worked with____ to support **implementation of child health programs and interventions since 2015**? **0=No 1= Yes**	(7) Has your organization worked with____ to **develop, monitor, or implement accountability mechanisms** for child health **since 2015**? **0=No 1= Yes**	(8) What best describes your **organization's working relationship** with _____ **since 2015**? **1=Communication 2=Coordination 3=Collaboration**	(9) What is the **overall quality** of your organization's relationship with_____? **1= Poor 2=Fair 3= Good 4=Very Good or Excellent**
1)	**0 1 2**	**0 1 2 3 4 5**	**0 1**	**0 1**	**0 1**	**0 1**	**1 2 3**	**1 2 3 4**
2)								
3)								
4)								
5)								
ADD all orgs								

13) **Please list up to five organizations that you believe have been most influential for contributing to improvements in child health (in order of influence with 1 being the most influential). That is, whose views, ideas, and/or research have been most listened to and have had the greatest impact. Influence might occur in any area (i.e., technical, functional, administrative, etc.).** ***Refer to the list from the ONA above if it helps.***

Most influential:

1. _____
2. _____
3. _____
4. _____
5. _____

14) **What organization do you look to for providing or having the latest evidence on child health for developing child health policies, programs, guidelines, training materials or capacity building of health workforce in child health.** ***Again, please list up to five such organizations in order of importance starting with the number 1, as the first organization you turn to. Refer to the list from above if it helps.***

Provide latest evidence in child health:

1. _____
2. _____
3. _____
4. _____
5. _____

15) **Who would you say have been or still are the best coordinators child health, that is, who have the respect and credibility from other organizations to working effectively with multiple stakeholders?** ***Again, please list up to five such organizations in order of importance starting with the number 1, as the first organization you nominate for this coordinating role.***

Best child health coordinators:

1. _____
2. _____
3. _____
4. _____
5. _____

ANNEX D: ONA – COMPLETE RESULTS

Table 1. Top 10 degree centrality and betweenness centrality scores for overall relationships

Organization	Normalized Degree Centrality		Organization	Normalized Betweenness Centrality
MOH_RCHS	22		WHO	54.50
WHO	22		MOH_RCHS	45.03
UNICEF	21		UNICEF	34.41
PMORALG	19		PMORALG	21.84
MOH_IMMUN	17		MOH_IMMUN	20.19
MOH_NCH	17		EGPAF	15.63
WB	15		MOH_NCH	15.06
MKAPA FDN	14		MKAPA FDN	14.44
IHI	13		WB	10.69
JHPIEGO	13		PATH	8.91

* MUHAS also had a degree centrality score of 13

Table 2. Density and centralization measures for overall networks

Type	Confirmed (%)	
	Density	Centralization
Overall relationship	52.00	41.32
Strategies	37.33	52.26
Capacity Building	28.33	39.96
Accountability	23.67	44.79
Implementation	33.00	56.77

Table 3. Top 10 degree centrality scores by type of child health related activity

Organization	Normalized Degree Centrality	Organization	Normalized Degree Centrality	Organization	Normalized Degree Centrality	Organization	Normalized Degree Centrality
Strategies		Capacity		Accountability		Implementation	
MOH_RCHS	21	MOH_RCHS	16	MOH_RCHS	16	MOH_RCHS	21
WHO	21	UNICEF	16	PMORALG	15	UNICEF	18
UNICEF	18	WHO	15	UNICEF	15	MOH_NCH	16
MOH_NCH	16	MOH_IMMUN	14	WHO	14	PMORALG	16
PMORALG	16	PMORALG	14	MOH_NCH	13	WHO	16
MOH_IMMUN	15	MOH_NCH	13	USAID	8	MOH_IMMUN	13
USAID	12	USAID	9	MUHAS	7	USAID	10
WB	11	WB	8	EGPAF	6	IHI	8
PAT	9	MUHAS	7	JHPIEGO	6	MUHAS	8
EGPAF	8	EGPAF	6	MOH_IMMUN	6	PATH	8

* Strategies: GIZ, JHPIEGO, UNFPA also had a score of 8; Capacity: JHPIEGO and PAT had scores of 6; Accountability and Implementation: WB had a score of 6 for each activity

Table 4. Top 10 betweenness centrality scores by type of child health related activity

Organization	Normalized Betweeness Centrality	Organization	Normalized Betweeness Centrality	Organization	Normalized Betweeness Centrality	Organization	Normalized Betweeness Centrality
Strategies		Capacity		Accountability		Implementation	
WHO	116.81	UNICEF	68.03	PMORALG	91.67	MOH_RCHS	147.10
MOH_RCHS	93.15	MOH_NCH	67.26	MOH_RCHS	68.97	UNICEF	75.130
UNICEF	42.92	WHO	64.85	UNICEF	55.77	PMORALG	48.85
MOH_IMMUN	38.89	MOH_IMMUN	60.85	MOH_NCH	30.00	PATH	46.62
PMORALG	38.06	MOH_RCHS	59.92	WHO	29.57	MOH_NCH	43.21
MOH_NCH	26.48	PMORALG	44.78	MUHAS	11.30	WHO	33.74
WB	8.76	CHAI	44.00	CIDA	2.40	MOH_IMMUN	29.43
USAID	8.44	GIZ	44.00	EGPAF	2.17	WB	6.09
CIDA	3.50	PATH	6.78	USAID	1.80	CHAI	3.33
UNFPA	2.54	IHI	6.02	UDAR	1.07	USAID	2.91

Table 5. All degree centrality and betweenness centrality scores for overall relationships

Organization	Normalized Degree Centrality		Organization	Normalized Betweenness Centrality
MOH_RCHS	22		WHO	54.50
WHO	22		MOH_RCHS	45.03
UNICEF	21		UNICEF	34.413
PMORALG	19		PMORALG	21.84
MOH_IMMUN	17		MOH_IMMUN	20.19
MOH_NCH	17		EGPAF	15.63
WB	15		MOH_NCH	15.06
MKAPA FDN	14		MKAPA FDN	14.44
IHI	13		WB	10.69
JHPIEGO	13		PATH	8.91
MUHAS	13		GIZ	7.72
USAID	13		MUHAS	6.46
EGPAF	12		IHI	6.31
GIZ	12		JHPIEGO	6.04
CHAI	11		CIDA	5.16
CIDA	10		USAID	4.37
PAT	10		CHAI	3.94
PATH	10		PAT	2.91
UNFPA	10		UNFPA	2.65
R4D	9		R4D	2.28
UDAR	8		UDAR	1.40
AKDN	7		AKDN	1.29
WRA_TZ	6		KNCV	0.33
CSSC	5		WRA_TZ	0.25
KNCV	3		CSSC	0.20

Table 6. All degree centrality scores by type of nutrition related activity

Organization	Normalized Degree Centrality	Organization	Normalized Degree Centrality	Organization	Normalized Degree Centrality	Organization	Normalized Degree Centrality
Strategies		Capacity		Accountability		Implementation	
MOH_RCHS	21	MOH_RCHS	16	MOH_RCHS	16	MOH_RCHS	21
WHO	21	UNICEF	16	PMORALG	15	UNICEF	18
UNICEF	18	WHO	15	UNICEF	15	MOH_NCH	16
MOH_NCH	16	MOH_IMMUN	14	WHO	14	PMORALG	16
PMORALG	16	PMORALG	14	MOH_NCH	13	WHO	16
MOH_IMMUN	15	MOH_NCH	13	USAID	8	MOH_IMMUN	13
USAID	12	USAID	9	MUHAS	7	USAID	10
WB	11	WB	8	EGPAF	6	IHI	8
PAT	9	MUHAS	7	JHPIEGO	6	MUHAS	8
EGPAF	8	EGPAF	6	MOH_IMMUN	6	PATH	8
GIZ	8	JHPIEGO	6	WB	6	WB	8
JHPIEGO	8	PAT	6	CIDA	5	EGPAF	7
UNFPA	8	CHAI	5	GIZ	4	JHPIEGO	7
MUHAS	7	GIZ	5	UDAR	4	PAT	7
R4D	7	IHI	5	UNFPA	4	CHAI	5
CHAI	6	UNFPA	5	AKDN	3	UNFPA	5
CIDA	6	MKAPAFDN	4	WRA_TZ	3	CIDA	4
IHI	6	PATH	4	CHAI	2	GIZ	4
AKDN	4	UDAR	4	IHI	2	MKAPAFDN	4
MKAPAFDN	4	CIDA	3	MKAPAFDN	2	AKDN	3
PATH	4	KNCV	2	PATH	1	R4D	3
WRA_TZ	4	AKDN	1	CSSC	0	WRA_TZ	3
CSSC	2	CSSC	1	KNCV	0	CSSC	2
UDAR	2	R4D	1	PAT	0	KNVC	1
KNCV	1	WRA_TZ	0	R4D	0	UDAR	1

Table 7. All betweenness centrality scores by type of nutrition related activity

Organization	Normalized Betweeness Centrality	Organization	Normalized Betweeness Centrality	Organization	Normalized Betweeness Centrality	Organization	Normalized Betweeness Centrality
Strategies		Capacity		Accountability		Implementation	
WHO	116.81	UNICEF	68.03	PMORALG	91.67	MOH_RCHS	147.10
MOH_RCHS	93.15	MOH_NCH	67.26	MOH_RCHS	68.97	UNICEF	75.13
UNICEF	42.92	WHO	64.85	UNICEF	55.77	PMORALG	48.85
MOH_IMMUN	38.89	MOH_IMMUN	60.85	MOH_NCH	30.00	PATH	46.62
PMORALG	38.06	MOH_RCHS	59.92	WHO	29.57	MOH_NCH	43.21
MOH_NCH	26.48	PMORALG	44.78	MUHAS	11.30	WHO	33.74
WB	8.76	CHAI	44.00	CIDA	2.40	MOH_IMMUN	29.43
USAID	8.44	GIZ	44.00	EGPAF	2.17	WB	6.09
CIDA	3.50	PATH	6.78	USAID	1.80	CHAI	3.33
UNFPA	2.54	IHI	6.02	UDAR	1.07	USAID	2.91
PAT	2.95	MUHAS	5.06	WB	0.90	MKAPAFDN	1.44
AKDN	1.33	WB	4.86	AKDN	0.40	PAT	1.43
MUHAS	1.32	USAID	2.90	CHAI	0	JHPIEGO	1.24
EGPAF	1.19	MKAPAFDN	2.06	CSSC	0	EGPAF	0.86
JHPIEGO	1.15	PAT	1.22	GIZ	0	IHI	0.86
R4D	0.98	EGPAF	0.73	IHI	0	MUHAS	0.86
GIZ	0.62	KNCV	0.66	JHPIEGO	0	CIDA	0.50
IHI	0.62	AKDN	0	KNCV	0	R4D	0.40
CHAI	0.29	CIDA	0	MKAPAFDN	0	AKDN	0
CSSC	0	CSSC	0	MOH_IMMUN	0	CSSC	0
KNCV	0	JHPIEGO	0	PAT	0	GIZ	0
MKAPAFDN	0	R4D	0	PATH	0	KNCV	0
PATH	0	UDAR	0	R4D	0	UDAR	0
UDAR	0	UNFPA	0	UNFPA	0	UNFPA	0
WRA_TZ	0	WRA_TZ	0	WRA_TZ	0	WRA_TZ	0

Table A. Background characteristics

Yrs in the Position	n (%)
1-2 years	
3-5 years	6 (24.0)
10+ years	5 (20.0)
6-9 years	5 (20.0)
Yrs working with the organization	**n (%)**
10+ years	11 (44.0)
6-9 years	6 (24.0)
1-2 years	4 (16.0)
3-5 years	4 (16.0)
Percent of work activities related to child health	**n (%)**
1-24%	7 (28.0)
25-49%	7 (28.0)
75-100%	7 (28.0)
50-74%	4 (16.0)
Number of full-time equivalent employees	
N	25
Median (IQR)	37.0 (53.0)
Min, Max	0, 700
Mode	1
Importance grading of improving child health	
N	25
Median (IQR)	5.0 (0.0)
Min, Max	2, 5
Mode	5
Other organizations that you also currently work for or represent	
	18 (72.0)
Yes	7 (28.0)

Table B. Areas of child health

Areas of child health	n (%)*
Child health surveys, assessments and surveillance	19 (76.0)
Post-natal care	19 (76.0)
Essential Newborn Care	18 (72.0)
Food security	18 (72.0)
Immunizations	18 (72.0)
Prenatal care	18 (72.0)
Prevention and treatment of childhood illnesses	18 (72.0)

Areas of child health	n (%)*
Growth monitoring and promotion	16 (64.0)
Routine child health information systems and reporting	16 (64.0)
Breastfeeding	15 (60.0)
Prevention and control of micronutrient deficiencies	15 (60.0)
Treatment of moderate or severe acute malnutrition	15 (60.0)
Complementary feeding	14 (56.0)
Other, specify	13 (52.0)
KMC Neonatal care unit	1 (4.0)
Malaria	1 (4.0)
Males circumcision	1 (4.0)
NCD, secondhand tobacco prevention, Care and treatment of HIV	1 (4.0)
Ped HIV, PMTCT	1 (4.0)
Supply chain for essential medicine	1 (4.0)
Early childhood development	9 (36.0)
Water, sanitation and hygiene	6 (24.0)

*Categories are not mutually exclusive; denominator is the number of subjects interviewed (N = 25)

Table C. Top 3 areas of child health

Top 3 Areas of child health	n (%)*
Essential Newborn Care	8 (32.0)
Immunizations	8 (32.0)
Food security	6 (24.0)
Growth monitoring and promotion	6 (24.0)
Post-natal care	6 (24.0)
Breastfeeding	4 (16.0)
Child health surveys, assessments and surveillance	4 (16.0)
Prenatal care	4 (16.0)
Prevention and control of micronutrient deficiencies	3 (12.0)
Prevention and treatment of childhood illnesses	3 (12.0)
Routine child health information systems and reporting	3 (12.0)
Complementary feeding	2 (8.0)
Other, specify	2 (8.0)
PMTCT and Ped HIV	1 (4.0)
Early childhood development	1 (4.0)

* Categories are not mutually exclusive; denominator is the number of subjects interviewed (N =25)

Table D. Activities Engaged In

Activities Engaged in	n (%)
Providing technical advice and expertise	23 (92.0)
Capacity development/training	22 (88.0)
Policy dialogue and advocacy	22 (88.0)
Program strategies/design	21 (84.0)
Coordination	20 (80.0)
Evidence generation, including evaluations, studies and research	20 (80.0)
Service delivery/program implementation	20 (80.0)
Quality assurance	18 (72.0)
Scaling-up implementation	18 (72.0)
Accountability and governance mechanisms	17 (68.0)
Planning and budgeting	17 (68.0)
Social and behavior change	17 (68.0)
Knowledge management	16 (64.0)
Support to your organization's country and field offices	15 (60.0)
Other, specify	4 (16.0)
Analytical services	1 (4.0)
Faith matters	1 (4.0)
Supply chain monitoring for medicine	1 (4.0)
Teaching	1 (4.0)

* Categories are not mutually exclusive; denominator is the number of subjects interviewed (N = 25)

Table E. Top 3 Activities Engaged in

Top 3 Activities Engaged in	n (%)*
Policy dialogue and advocacy	10 (40.0)
Capacity development/training	8 (32.0)
Program strategies/design	8 (32.0)
Providing technical advice and expertise	8 (32.0)
Planning and budgeting	6 (24.0)
Service delivery/program implementation	6 (24.0)
Evidence generation, including evaluations, studies and research	4 (16.0)
Coordination	3 (12.0)
Scaling-up implementation	3 (12.0)
Quality assurance	2 (8.0)
Social and behaviour change	2 (8.0)
Accountability and governance mechanisms	1 (4.0)
Knowledge management	1 (4.0)
Other, specify	1 (4.0)
Supply chain monitoring for medicines	1 (4.0)
Support to your organization's country and field offices	1 (4.0)

* Categories are not mutually exclusive; denominator is the number of subjects interviewed (N = 25)

Table F. Most Influential Organizations for Contributing to Improvements in Child Health

Rank #1	n (%)*
UNICEF	14 (56.0)
WHO	3 (12.0)
MOH	2 (8.0)
MOH_Immunization	1 (4.0)
JHPIEGO	1 (4.0)
MHO	1 (4.0)
MUHAS	1 (4.0)
PORALG	1 (4.0)
USAID (USG)	1 (4.0)
Rank #2	**n (%)***
UNICEF	6 (24.0)
WHO	5 (20.0)
USAID	3 (12.0)
PORALG	2 (8.0)
EGPAF	1 (4.0)
GAVI	1 (4.0)
MOH	1 (4.0)
MOH NCH	1 (4.0)
MOH RCH	1 (4.0)
UNICEF	1 (4.0)
Rank #3	**n (%)***
WHO	6 (24.0)
USAID	3 (12.0)
CDC	1 (4.0)
EGPAF	1 (4.0)
GIZ	1 (4.0)
IHI	1 (4.0)
JHPIEGO	1 (4.0)
MOH	1 (4.0)
MOH MCH	1 (4.0)
MOH Maternal and Child Health Section	1 (4.0)
Ministry of Finance	1 (4.0)
Mkapa Foundation	1 (4.0)
MOH_ Immunization	1 (4.0)
PAT	1 (4.0)
PMORALG	1 (4.0)
UNFPA	1 (4.0)
USAD	1 (4.0)
WB	1 (4.0)
PMORALG	1 (4.0)

Rank #4	n (%)
JHPIEGO	5 (20.0)
EGPAF	2 (8.0)
IHI	2 (8.0)
R4D	2 (8.0)
USAID	2 (8.0)
BENJAMIN MKAPA	1 (4.0)
EGPAF	1 (4.0)
JHPIEGO	1 (4.0)
GAVI	1 (4.0)
JHPIEGO	1 (4.0)
MOH	1 (4.0)
MUHAS	1 (4.0)
PAT	1 (4.0)
Parliamentarians	1 (4.0)
SAVE THE CHILDREN	1 (4.0)
UNFPA	1 (4.0)
Rank #5	n (%)
IHI	3 (12.0)
EGPAF	3 (12.0)
JHPIEGO	2 (8.0)
MOH	2 (8.0)
USAID	2 (8.0)
BMGF	1 (4.0)
CDC	1 (4.0)
CHAI	1 (4.0)
Commissioners Regional	1 (4.0)
CSO	1 (4.0)
JHPIEGO	1 (4.0)
MOH - Newborn and child health	1 (4.0)
MUHAS	1 (4.0)
PAT	1 (4.0)
PATH	1 (4.0)
UDSM	1 (4.0)
UNFPA	1 (4.0)

* Categories are not mutually exclusive; denominator is the number of subjects interviewed (N = 25)

Table G. Organizations having the latest evidence on child health

Rank #1	n (%)*
UNICEF	14 (56.0)
WHO	6 (24.0)
MOH	2 (8.0)
JHPIEGO	1 (4.0)
MOH NCH	1 (4.0)
USAID	1 (4.0)
Rank #2	**n (%)***
UNICEF	8 (32.0)
WHO	4 (16.0)
JHPIEGO	3 (12.0)
EGPAF	1 (4.0)
IHI	1 (4.0)
MHO	1 (4.0)
MOH	1 (4.0)
MOH_ Immunization	1 (4.0)
PAT	1 (4.0)
R4D	1 (4.0)
USAID	1 (4.0)
USAID (USG)	1 (4.0)
Rank #3	**n (%)***
WHO	4 (16.0)
IHI	3 (12.0)
JHPIEGO	2 (8.0)
PATH	2 (8.0)
USAID	2 (8.0)
GFF secretariat	1 (4.0)
MOH	1 (4.0)
MUHAS	1 (4.0)
MOH MCH	1 (4.0)
MOH immunization/ NCH, MCH	1 (4.0)
NBS	1 (4.0)
PAT	1 (4.0)
SAVE THE CHILDREN	1 (4.0)
UDSM	1 (4.0)
WB	1 (4.0)
Rank #4	**n (%)***
MUHAS	4 (16.0)
USAID	4 (16.0)
JHPIEGO	2 (8.0)
UNFPA	2 (8.0)
BENJAMIN MKAPA FOUNDATION	1 (4.0)

CSSC	1 (4.0)
EGPAF	1 (4.0)
EGPAF (EGPILE)	1 (4.0)
IHI	1 (4.0)
MHO	1 (4.0)
MOH	1 (4.0)
MOH MCH	1 (4.0)
R4D	1 (4.0)
Universities and training institution	1 (4.0)
WORLD BANK	1 (4.0)
Rank #5	**n (%)***
JHPIEGO	3 (12.0)
GIZ	2 (8.0)
IHI	2 (8.0)
AGAKHAN	1 (4.0)
Development partners	1 (4.0)
EGPAF	1 (4.0)
MUHAS	1 (4.0)
R4D	1 (4.0)
USAID	1 (4.0)

* Categories are not mutually exclusive; denominator is the number of subjects interviewed (N = 25)

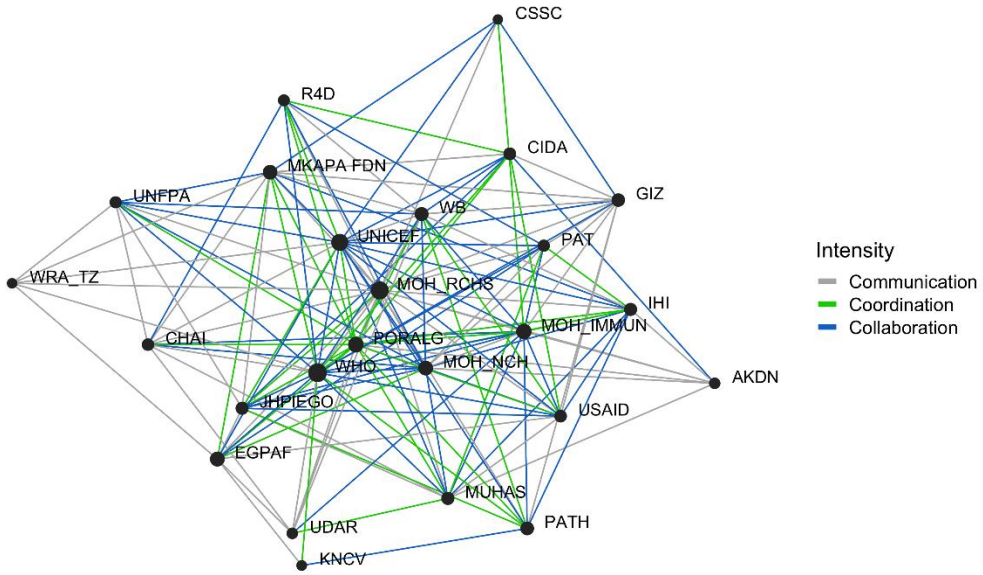
Table H. Best Child Health Coordinators

Rank #1	n (%)*
UNICEF	13 (52.0)
MOH	5 (20.0)
WHO	2 (8.0)
CHAI	1 (4.0)
JHPIEGO	1 (4.0)
RMNCH TWG	1 (4.0)
USAID	1 (4.0)
WHITE RIBON ALIANCE	1 (4.0)
Rank #2	**n (%)***
WHO	6 (24.0)
UNICEF	5 (20.0)
MOH	3 (12.0)
USAID	3 (12.0)
EGPAF	1 (4.0)
SAVE THE CHILDREN	1 (4.0)
MOH NCH	1 (4.0)
MOH MCH	1 (4.0)
MUHAS	1 (4.0)

PORALG	1 (4.0)
Prime Minister's Office on nutrition (including child nut)	1 (4.0)
R4D	1 (4.0)
Rank #3	**n (%)***
WHO	5 (20.0)
UNICEF	4 (16.0)
USAID	4 (16.0)
JHPIEGO	2 (8.0)
PAT	2 (8.0)
BMF	1 (4.0)
DPG Health and DPG Nutrition	1 (4.0)
GIZ	1 (4.0)
MOH	1 (4.0)
PORALG	1 (4.0)
USAD (USG)	1 (4.0)
Rank #4	**n (%)***
JHPIEGO	3 (12.0)
R4D	2 (8.0)
UNFPA	2 (8.0)
WHO	2 (8.0)
CSSC	1 (4.0)
JHPIEGO	1 (4.0)
Giz	1 (4.0)
IHI	1 (4.0)
MOH	1 (4.0)
MOH MCH	1 (4.0)
MUHAS	1 (4.0)
PAT	1 (4.0)
PORALG	1 (4.0)
USAID	1 (4.0)
Rank #5	**n (%)***
IHI	2 (8.0)
PAT	2 (8.0)
PATH	2 (8.0)
USAID	2 (8.0)
WHO	2 (8.0)
BENJAMIN MKAPA	1 (4.0)
EGPAF	1 (4.0)
EGPAF (EGPILE)	1 (4.0)
MUHAS	1 (4.0)
PMORALG	1 (4.0)
UNFPA	1 (4.0)
UNICEF	1 (4.0)

* Categories are not mutually exclusive; denominator is the number of subjects interviewed (N = 25)

Figure 1. Confirmed intensity of relationships with nodes sized by betweenness centrality



FOR MORE INFORMATION

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