THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF HEALTH AND SOCIAL WELFARE

SCALE-UP STRATEGY FOR ESSENTIAL MEDICINES FOR CHILD HEALTH

DIARRHEA, MALARIA AND PNEUMONIA

2012-2015

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ACRONYMS

ACT - Artemisinin-Combination Therapy
ADDO – Accredited Drug Dispensing Outlets
BCC – Behavior Change Communications
c-HMIS – community Health Management Information System
c-IMCI – community-Integrated Management of Childhood Illness
C4D – Communication for Development
CCAs – Community Change Agents
CCHP – Comprehensive Council Health Plans
CHA – Community Health Attendants
CHMT – Counsel Health Management Team
CHSB – Counsel Health Service Board
CHW – Community Health Worker
CORPS – Community Owned Resource Persons
dIMCI - paper-based distance learning IMCI
DHMT – District Health Management Team
DLDB – Duka la Dawa Baridi = private drug shops
EMI – Essential Medicines
EMLc – Essential Medicines List for Children
EPI – Expanded Programme of Immunization
GMP – Good Manufacturing Practices
GoT – Government of Tanzania
HMIS – Health Management Information System,
HRH – Human Resources for Health
IEC – Information, Education and Communication
iCCM – integrated Community Case Management
IMCI – Integrated Management of Childhood Illness
IPC – interpersonal communications
ITN – Insecticide Treated Net
LQAS - Lot Quality Assurance Sampling
MDG – Millennium Development Goals
MMAM – Primary Health Services Development Programme
MNCH – Maternal, Neonatal and Child Health
MOHSW – Ministry of Health and Social Welfare
MSD – Medical Stores Department
MSH – Management Sciences for Health
MUHAS – Muhimbili University of Health and Allied Sciences
NbCH – Newborn and Child Health Unit within the Reproductive and Child Health Section of the MOHSW
NFSD - Novartis Foundation for Sustainable Development
NIMR – National Institute for Medical Research
NMCP – National Malaria Control Program
NACP – National HIV/AIDS Control Program
One Plan – National Road Map Strategic Plan to Accelerate Reduction of Maternal, Newborn and Child Deaths in Tanzania 2008-2015
ORS – Oral Rehydration Solution
OTC – Over-the-Counter
PHASTs - Participatory Hygiene and Sanitation Transformation
POUZN/AED - USAID-funded Point-of-Use Water Disinfection and Zinc Treatment project won by AED
RCHS – Reproductive and Child Health Section of the MOHSW
RDT – Rapid Diagnostic Test
RHMT – Region Health Management Team
ROI – Return on Investment
SMI – Safe Motherhood Initiative
SP – Sulfadoxine - pyrimethamine
TDHS – Tanzania National Demographic and Health Surveys
TFDA – Tanzania Food and Drugs Administration
UNICEF – United Nations Children's Fund
VHW – Village Health Worker
WASH – Water, Sanitation and Hygiene
WHO – World Health Organization

1. EXECUTIVE SUMMARY

Results from the Tanzania National Demographic and Health Surveys (TDHS) and other health surveys over the years suggest a significant drop in child and infant mortality [1]. Comparing the baseline child mortality statistic of 191/1,000 births [2] to the TDHS 2010 statistic of 81/1,000 [1] suggests a 58% drop in child mortality between 1990 and 2010. The surveys and analyses state that if the pace of decline in child mortality is sustained, Tanzania will be able to reach Millennium Development Goal 4 by 2015 [1,2,3]. To reach the Government of Tanzania's (GoT) 2015 target of reducing child mortality to 54/1,000 births, as stated in the *National Strategy for Growth and Reduction of Poverty II, 2010* [4], however, an additional 33% reduction in child mortality is necessary.

The global Essential Medicines Initiative (EMI) proposes a focused goal on achieving universal coverage in ORS/zinc for diarrheal disease, ACTs for malaria, and dispersible amoxicillin for pneumonia by 2015 to help key countries like Tanzania reach MDG 4 by 2015. This focused approach is valuable for Tanzania where a rather low percentage of children under five access appropriate first-line treatments for diarrhea, malaria and pneumonia. While almost half of children sick with diarrhea receive a form of ORS for diarrhea treatment, sometimes with zinc included, only 4.7% receive zinc as a separate part of that treatment [1]. 36.8% with fever received ACTs as treatment, but only 25.9% within the recommended 24 hour timeframe [1]. The last official statistics collected for pneumonia from the TDHS 1991-92 show that only 22% of sick children received antibiotics [5]. The fact that treatment statistics are not systematically collected for pneumonia and are over twenty years old underlines the lack of attention given to this main cause of under-five mortality and suggests that the treatment access challenge is probably similar twenty years later. On the positive side, the percent of caregivers seeking treatment for their children sick with diarrhea (53%), malaria (65%) or pneumonia (71%) is systematically higher than the percent accessing appropriate treatment [1]. An immediate priority, therefore, is ensuring access to appropriate treatment and quality services for those already seeking care, which is well-aligned with the EMI. Furthermore, focusing on treatment availability and reduced stock-outs will also increase care-seeking, as stock-outs at public facilities are often cited as reasons for not seeking care [6, 7].

The EMI goal of universal coverage in ORS/Zinc for diarrhea, ACTs for malaria and dispersible amoxicillin for pneumonia requires a mix of interventions that respond to persistent bottlenecks and challenges across areas such as supply and service access, quality of services, and knowledge and demand in order to promote the rational use of services and treatments. Since care-seeking is above average in Tanzania, Tanzania presents a Strategy below that allows a comprehensive priority response to rational treatment, but in such a way that care-seeking will be promoted, as well.

At the heart of the Strategy outlined in this document is a commitment to cost-effective, innovative solutions that play on the strengths of the public and private sector and support the important community-level efforts already taking place. The Strategy proposes 3 objectives and 7 interventions intended to contribute to the goal of universal coverage:

- Objective 1: Improve availability and accessibility of essential medicines and commodities for pediatric care at the facility and community level through the public and private sectors by strengthening existing supply chain management systems
  It is supported by four interventions: (1) Expand TFDA registration fast-tracked Priority Products List and register key EMLc Drugs; (2) Roll-out of diarrheal treatment corners and launch of pre-packaged ORS/zinc through the public and private sector; (3) Adaptation and scale-up of proven mHealth monitoring system; (4) ADDO network access strengthening
- Objective 2: Improve ability of health care providers to provide quality pediatric care services and promote rational use of pediatric diarrhea, malaria and pneumonia essential medicines by building health care provider capacity across the different sectors
  It is supported by one intervention: (5) Roll-out of ICATT IMCI training and alignment with a motivation/incentives system to active linkages
- Objective 3: Increase informed demand for child health services by implementing comprehensive and integrated communication strategies promoting child health services, products and behavior change
  It is supported by two interventions: (6) Targeted advocacy campaign promoting the Strategy at all levels; (7) Targeted BCC campaign to promote rational diarrhea, malaria & pneumonia diagnosis and treatment

The MOHSW is committed to improving access to rational diagnosis and treatment of diarrhea, malaria and pneumonia in order to reach universal coverage and continue on its path toward fulfilling MDG 4 by 2015. This Strategy and its vision are seen as essential to meeting these goals.

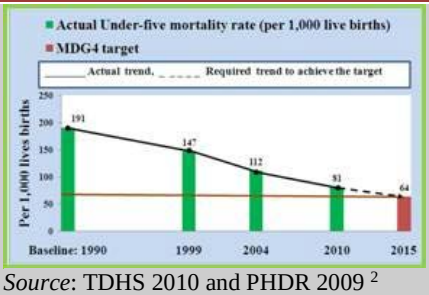
2. ANALYSIS & STRATEGIC CONTEXT

2.1 Child mortality and overall access to healthcare

Results from the Tanzania National Demographic and Health Surveys (TDHS) and other health surveys over the years suggest a significant drop in child and infant mortality (see Table 1 below) [1]. Comparing the baseline child mortality statistic of 191/1,000 births [2] to the TDHS 2010 statistic of 81/1,000 [1] suggests a 58% drop in child mortality between 1990 and 2010. Other analyses, such as the *Child survival gains in Tanzania: analysis of data from demographic and health surveys* regression analysis by Honorati Masanja, Don de Savigny, Paul Smithson, et al., also suggest reductions of up to 40% between 1990 and 2004 [3]. These surveys and analyses state that if the pace of decline in child mortality is sustained, Tanzania will be able to reach Millennium Development Goal 4 by 2015 [1,2,3]. Tanzania's success is often attributed to its aggressive work to expand immunization, provide Vitamin A supplementation, control malaria, and introduce IMCI, as well as its health sector decentralization, basket-funding approach and increased public expenditures on health [3].

To reach the Government of Tanzania's (GoT) 2015 target of reducing child mortality to 54/1,000 births, as stated in the *National Strategy for Growth and Reduction of Poverty II, 2010* [4], an additional 33% reduction in child mortality is necessary. A focused and integrated response to major causes of child mortality, such as malaria (16%), pneumonia (13%) and diarrheal disease (11%) [5][1] is required with a special new focus on the most neglected of these three, pneumonia and diarrheal disease. This additional push will also require moving beyond current child survival interventions to respond to persistent bottlenecks and challenges across areas such as access to treatment and supply chain management, care-seeking and demand for services, and policy environment. Linkages across public, private and community levels will also need to be considered and potentially reinforced to promote efficiencies. As stated in the United Republic of Tanzania Ministry of Health and Social Welfare (MOHSW)'s *Primary Health Services Development Programme – MMAM 2007-2017*, "To be able to reach the MDG [Millennium Development Goal] 4 & MDG 5 targets by 2015 substantive efforts has to be made in strengthening the existing system and expand and decentralize further services, this implies a comprehensive approach is required to improve coverage within all districts with emphasis of reaching every child and woman and youth with essential effective interventions [6, pg.28]."

Table 1: Context Snapshot

General Information		
Under-five Mortality 1990	**191/1,000 births (see graph)** [2]	
Under-five Mortality TDHS 2004-5	**112/1,000 births** [1]	
Under-five Mortality TDHS 2010	**81/1,000 births** [1]	
Under-five Mortality 2015 Target	**MDG = 64/1,000** [2] **and GoT = 54/1,000** [4]	*Source*: TDHS 2010 and PHDR 2009 [2]

	Diarrhea	Malaria	Pneumonia
Prevalence (% in the two weeks preceding survey)	**15%** [1]	**23%** [1]	**4%** [1]
Mortality	**11%** [5][1]	**16%** [5][1]	**13%** [5][1]
Care-seeking			
Of the children under five who had symptoms in the two weeks preceding the survey, % taken to see a health care provider/facility	53% [1]	65% (fever) [1]	71% [1]
Treatment Coverage			
Appropriate first-line treatment	44% (ORS or ORS/zinc) [1]	36.8% (ACTs, at all) 25.9% (ACTs within	22% (antibiotics, per TDHS 1991-92) [5]

[1]Mortality statistics in the *Countdown to 2015 2010 Report, United Republic of Tanzania* state the source as WHO/CHERG 2010 [5]

	4.7% (Zinc) [1]	24hrs) [1]	Dispersible Amoxicillin – n/a
Primary Alternative	Antibiotics	12% (Quinine) [1]	Cotrimoxazole
Other treatments (even if against policy)	Pill/syrup (49.8%) [1] IV (0.5%) [1] Home Remedy/Other (6.8%) [1]	Amodiaquine (7%) [1] SP/Fansidar (3%) [1] Chloroquine (0.1%) [1], others (1% or less each) [1]	IV or Crystapen injection [7]

The global Essential Medicines Initiative (EMI) proposes a focused goal on achieving universal coverage in ORS/zinc for diarrheal disease, ACTs for malaria, and dispersible amoxicillin for pneumonia by 2015 to help key countries like Tanzania reach MDG 4 by 2015. This focused approach is valuable for Tanzania where Table 1 above shows a rather low percentage of children under five accessing appropriate first-line treatments across diarrhea, malaria and pneumonia. While almost half of children sick with diarrhea receive a form of ORS for diarrhea treatment, sometimes with zinc included, only 4.7% receive zinc as a separate part of that treatment [1]. Furthermore, 16.6% of children with diarrhea do not receive any form of treatment, and 40% were offered less fluid than usual or were given no fluids at all [1]. Curtailing fluids is a dangerous practice and can exacerbate the diarrhea case [1]. 36.8% with fever received ACTs as treatment, but only 25.9% within the recommended 24 hour timeframe [1]. In terms of pneumonia, the last official statistics collected for pneumonia from the THDS 1991-92 show that only 22% of sick children received antibiotics [5]. While these statistics suggest a challenge related to accessing appropriate pneumonia treatment, they are over twenty years old, and so the situation might have changed, but more recent statistics are not available to track the changes. The fact that treatment statistics are not systematically collected for pneumonia and are over twenty years old underlines the lack of attention given to this main cause of under-five mortality and suggests that the treatment access challenge still remains. On the positive side, the percent of caregivers seeking treatment for their children sick with diarrhea (53%), malaria (65%) or pneumonia (71%) is systematically higher than the percent accessing appropriate treatment [1]. An immediate priority, therefore, is in fact ensuring access to appropriate treatment and quality services for those already seeking care, which is well-aligned with the EMI. Furthermore, focusing on treatment availability and reduced stock-outs will also increase care-seeking, as stock-outs at public facilities are often cited as reasons for not seeking care [6, 7].

2.1.1 Sources of treatment – public and private sector landscape

Primary care is free at public facilities for children under five and pregnant women in Tanzania. Regardless of this incentive, limited accessibility to public health facilities, long lines and wait times, and frequent stock-outs of essential medicines often drive caregivers to seek care elsewhere, particularly in the private pharmacy sector [7]. According to the USAID/BASICS *Improving Child Health through the Accredited Drug Dispensing Outlet (ADDO) Program: Baseline Survey from the Five Districts in Tanzania, September 2006*, it was estimated in 2006 that there were "more than 6,000 DLDBs [Duka la Dawa Baridi, private drug shops] across all districts in the country; over 50 percent more than all public health facilities and 11 percent higher than all public, voluntary, and religious facilities combined [7, pg.1]." As such, the country has embarked on the ADDO Program to establish a network of privately-owned, regulated and accredited DLDBs that provide non-prescription and a limited number of essential prescription medicines from trained, quality-assured dispensers in more remote areas without easy access to public facilities [7]. The ADDO Program that started under USAID/BASICS is now being rolled-out nationwide by the TFDA supported by MSH and the Global Fund Round 7 for Malaria. All regions are expected to be covered in 2012. As expressed in the article by Edmund Rutta, Katie Senauer, Keith Johnson and Grace Adeya, *Creating a New Class of Pharmaceutical Services Provider for Underserved Areas: The Tanzania Accredited Drug Dispensing Outlet Experience*, the Program has been successful and has provided much needed treatment and service [8]. There is an important opportunity to focus on reaching universal coverage through further strengthening ADDO network quality of services and treatment access.

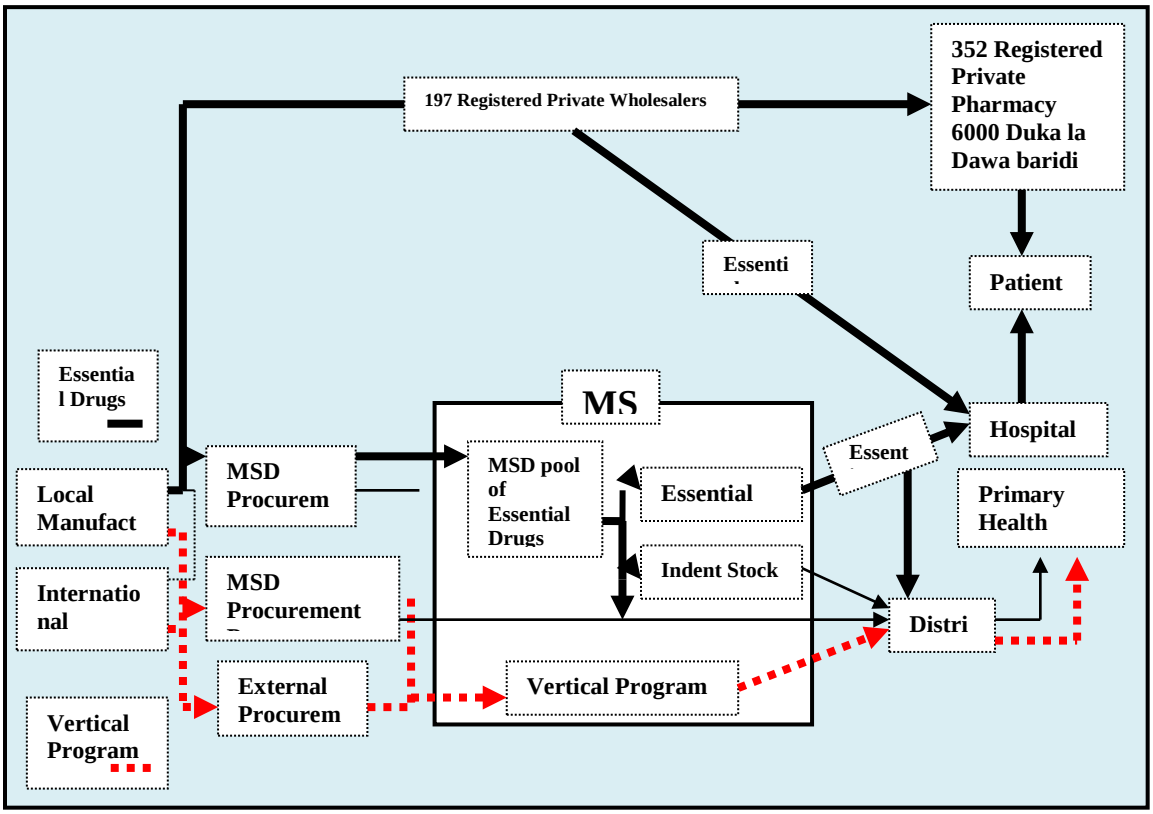
On the community-side, Tanzanian policy currently promotes c-IMCI and the distribution of ORS via 8 trained CORPS (Community-owned Resource Persons) per village plus two Community Health Workers, but does not allow the distribution of any other child survival treatments. The GoT has written policies against integrated Community Case Management (iCCM) given its experience ten years ago with Village Health Workers (VHW). VHWs were trained in the past in iCCM and provided with a health kit (ORS, cotrimoxazole, Chloroquine, eye ointment, etc.). The model, however, was unsustainable and required donor support. When donor support ran-out, medicine availability dropped and VHW motivation declined, causing a community backlash. Policy was then written against community distribution of drugs. Recently, the WHO and UNICEF are leading an effort to establish a Tanzania context-appropriate formalized cadre of CHWs, based on needs outlined in Tanzania's *Primary Health Services Development*

Programme – MMAM 2007-2017. The team is working with the Ifakara Institute to establish the curriculum, job aides, selection criteria, and recruitment and training packets. Three pilot districts were deployed in July 2011 and the Ifakara Institute is conducting the assessment of the model. After review of the situation, both in terms of other country experience and the WHO/UNICEF CHW work, the MOHSW has decided to introduce a new cadre of health worker, called the Community Health Attendant (CHA), to replace the CORPS. As paid MOHSW personnel, the CHAs will be responsible for interpersonal communications and iCCM outreach from the public health facility to the village. The roll-out of the CHAs is a new development and has not begun yet. It is being prioritized and funded by the MOHSW and is expected to have an important positive impact on linking the community into the health system to help improve maternal and child health.

Another important aspect of Tanzania's treatment landscape is its very specific supply chain for medicines, and especially essential medicines (see Figure 1 below). All imported and locally manufactured medicine procurements must pass through the Medical Stores Department (MSD) of the MOHSW. The MSD was created in 1993 and is a non-for-profit, semi-autonomous single agency owned by the government and an independent department within the MOHSW [9]. According to Nesia Satoki Mahenge's 2010 analysis of the MSD's July 2010 Stakeholder Meetings in her study *Pharmaceutical supply chain and distribution network, Implications on access to medicine and quality health care: Critical analysis of the public pharmaceutical sector in Tanzania*, 80% of the medicines are imported and 20% are procured locally [9]. The MSD then manages storage and distribution to the public sector through nine zonal medical stores which are situated in nine different regions throughout Tanzania. The zonal medical stores then distribute to the health facilities. The MSD works in close collaboration with the Tanzania Food and Drugs Administration (TFDA), which is focused on drug regulation, quality control and assurance, and pharmaceutical public and private sector inspections. [9]

For many years, starting in 1983, Tanzania's health system drug procurement and distribution system was based on a kit system by which facilities receive essential drugs rationed out based on a predetermined quantity rather than demand [10]. According to the *Tanzania: Integrated Logistics System Pilot-Test Evaluation: Using the Logistics Indicator Assessment Tool*, the indent system was introduced in the 1990s by the Pharmaceutical and Supplies Unit (PSU) "to transfer drug ordering from the central to the district level [10, pg.3]." The indent system has currently only been rolled-out to about half of the facilities, however [10, pg.5]. The indent system is an important improvement in Tanzania's procurement system, in that it allows a transition from the "push supply" of the kit system to a "pull supply" based on demand and health district needs, reducing waste and stock-outs. In 2002, the MOHSW approached JSI/DELIVER for technical assistance in integrating the logistics systems of many of its vertical programs into an Integrated Logistics Systems (ILS). The ILS was meant to take the improvements of the indent system "a step farther by including most or all vertical programs and the EDP in the same system. The ILS introduced routine reporting of data coupled with routine ordering of resupplies, which enhances accountability and provides the central level with data for decision-making, particularly forecasting [10, pg.3]." The ILS was initially piloted and Tanzania now has funding through 2013 to finalize the roll-out of the ILS to facilities nationwide. Electronic Logistics Management Information Systems (eLMIS) have been introduced in Tanzania to further strengthen the drug procurement and distribution system (please see Section 3, Intervention 3 for more information).

Figure 1 Pharmaceutical Supply Chain and Distribution Network in Tanzania



Source: Adapted from Euro Health Group: Tanzania Drug Tracking Study (2007) [9]

2.1.2 Access to and Rational Use of Diarrhea Treatment

Zinc and ORS were approved by the TFDA as Over-the-Counter (OTC) drugs in July 2009, thanks to a strong advocacy campaign led by the AED USAID-funded Point-of-Use Water Disinfection and Zinc Treatment (POUZN/AED) project [11]. The GoT started to procure zinc from its own budget in 2009 [11]. There still seems to be low awareness of the fact that zinc is OTC, however, which has limited its distribution, especially through CORPS. There are, however, health facility and CORPS refresher trainings on diarrhea using the updated IMCI guidelines and national training curriculum that include zinc policy and treatment information. The *IMCI Implementation in Tanzania: Experiences, Challenges and Lessons* report suggest that only 14% of service providers are up-to-date on IMCI trainings [12]. To bolster IMCI trainings, Diarrheal Treatment Corners have been reactivated at the peripheral level to promote diarrhea prevention and rational treatment. 20-30 wall charts have been provided per district, but more are needed.

In the private sector, ORS sachets run about $0.08 and zinc costs between $0.40-$0.80/course. Overall, market penetration and coverage for zinc is low. The % of outlets with zinc ranges from 47%-65%, depending on the outlet type [13]. The exception is pharmacies, as 80% carry zinc [13]. Only 70% of the wards have at least one outlet with zinc [13]. In terms of ORS, on the other hand, market penetration and coverage is better, with around 83% of the wards having at least one outlet with ORS, and 82% of facilities nationally with ORS [13].

2.1.3 Access to and Rational Use of Malaria Treatment

A significant portion of the MOHSW budget is committed to the control and prevention of malaria [1]. District IMCI/malaria focal points are trained and deployed to follow malaria issues such as availability of ACTs, SP and ITN vouchers and case management quality in their district facilities. Multiple grants support malaria treatment with ACTs,

including multiple GFATM rounds and PMI work focused on ACT and RDT procurement and training in case management and diagnostics [14]. ACTs are available at a subsidized price through the public sector, $0.60-$1.10 or full-price in the private sector at $6-$11. The MOHSW changed the treatment guidelines for malaria in the 1st quarter of 2010 from presumptive treatment of children under five to required parasitological diagnosis prior to treatment. The change was to be accompanied by a roll-out of RDT at peripheral health facilities, but the process has been slowed, leaving a lag between the policy change and the ability to implement the change.

2.1.4 Access to and Rational Use of Pneumonia Treatment

While pneumonia typically has not received much policy or intervention attention, there was a recent first-line treatment policy change in September 2011 from cotrimoxazole to dispersible amoxicillin. While TFDA regulations are changed, budgets are put in place, and stocks are obtained, it looks like the policy will accept both cotrimoxazole and dispersible amoxicillin as first-line treatments for the interim. In the meantime, Cotrimoxazole penetration is only at 66% of eligible outlets [13].

2.2 Assessment of key barriers to Access and Rational Use

The previous section hints at some important barriers related to access and rational use of treatment for three of the main causes of child mortality in Tanzania. Table 2 outlines key cross-cutting and disease-specific barriers to access and rational use of appropriate treatments related to patient demand and/or the public and private sector.

Table 2: Barriers Across Diseases and Sectors

	Patient	Public sector supply/provision (incl. community-level)	Private sector supply/provision
Cross-disease	(a) Insufficient care-seeking behavior (b) Outcome expectations that syrups, antibiotics, prescription drugs and IVs are more effective (c) Missed opportunity to raise demand by raising child health awareness among fathers, traditional healers, birth attendants and mothers (d) Misunderstanding the importance of finishing a full course of treatment (e) Low consumer confidence in certain drug quality	(a) Poor coordination and linkages across the health sector (i.e. between dispensaries, community-level CORPS and private sector ADDOs). (b) Drug, supply, equipment procurement bottlenecks (c) Limited reporting/supervision associated with HMIS, and minimal c-HMIS (d) Over-prescription of non-first-line treatments (e) Insufficient/outdated public sector training (f) Need for updated iCCM policy officially introducing CHAs (g) HRH crisis (h) Vertical health programming (NMCP and NACP) (i) Poor mainstreaming of child survival interventions and Village Health Committee plans into CCHP and Overall Council Plans (j) No comprehensive, in-depth assessment of child survival efforts and needs (k) Community agents work in silos (l) Attrition of trained CORPS (m) Poor coordination of partner work at the community level	(a) ADDO Stock-outs (b) Slow scale-up of the ADDO project (c) Drop-out of trained ADDO drug suppliers (d) Irrational drug sale by pharmacists/drug shops (e) ACTs and antibiotics are not OTC, limiting access
Diarrhea	(a) Low awareness of Zinc among caregivers & providers (b) Insufficient/incorrect care-	(a) Limited zinc awareness among CHWs (b) Public facility stock-outs, despite stock piles expiring	(a) Low zinc market penetration and coverage (b) Separation of ORS and zinc, both in terms of packaging and

	seeking behavior (53%)[1] (c) Outcome expectations favor syrups and antibiotics, rather than ORS/zinc [11]. Resistance to treatments that require self-preparation (d) Continued and increasing practice of curtailing fluid intake when children have diarrhea [1]	(c) Slow dissemination of changed policies regarding diarrhea treatment (d) Insufficient supervision, job aides and wall charts in facilities (e) Limited dissemination of policy change that ORS and zinc have OTC status has limited access	solution (c) Private sector stocks less ORS than is actually needed, given low demand and ROI (d) Stock expiration due to limited purchase (e) Limited dissemination of policy change that ORS and zinc have OTC status has limited access
Malaria	(a) Over-diagnosis of malaria creating excess demand for a malaria response (b) Use of ITNs less than access (c) Reduction in already insufficient care-seeking (65%)[1] (d) High ACT cost	(a) Service provider over-diagnosis of malaria (b) Stock-outs and irregular availability of ACTs and RDTs at public health facilities, especially in rural areas (c) Inadequate public health facility service provider training following NMCP guidelines (d) Inadequate public health facility Supervision (e) Questionable quality of IMCI/malaria focal point services (f) Missed opportunity to integrate other training into CCAs for holistic child health promotion	(a) Slow scale-up and stock-out of the ADDO program (b) ADDOs and pharmacies not allowed to perform malaria diagnosis using RDTs (c) No local manufacturer currently has WHO GMP status to be able to produce and sell ACTs to donors (d) ACTs are not OTC, limiting access
Pneumonia	(a) Misdiagnosis of pneumonia as malaria (b) Irrational drug use and preference for crystapen injections [7] (c) Insufficient care-seeking behavior (71%)[1] (d) Limited easy, cost-effective prevention options for pneumonia	(a) Lack of resources allocated to pneumonia (treatment data not collected since TDHS 1991-92) (b) Challenge of recent policy change to dispersible amoxicillin (c) Over-prescription of non-first-line treatments, especially IV/injections and syrups (d) Service provider misdiagnosis of pneumonia as malaria	(a) Low private sector market penetration (b) Dispersible Amoxicillin is not yet registered with the TFDA (c) Antibiotics are not OTC, limiting access

2.2.1 Cross-disease barriers

2.2.1.1 Patient, caregiver, and service provider barriers

Ensuring availability of treatment alone will not ensure its proper and rational use or sustainable demand for its existence. In Tanzania, there are important barriers related to outcome expectations on both the caregiver and service provider sides that antibiotics, prescription drugs, injections and syrups are more effective than other types of treatment. There is a further resistance and skepticism on the caregiver-side that treatments that require self-preparation, such as ORS, do not "cure" [11]. The preference leads to increased demand for prescription drugs, increasing their stock, and reduced demand for non-prescription drugs, such as ORS/zinc, reducing their stock. Using the case of pneumonia as an example, the USAID/BASICS *Improving Child Health through the Accredited Drug Dispensing Outlet Program* 2008 baseline qualitative survey found that mothers cited crystapen injection as the preferred treatment for pneumonia [7]. The report also cited high rates of service providers prescribing IV/injections and antibiotics rather than the first-line treatment [7]. As a further diarrhea example, of those who sought care for their children sick with diarrhea per the TDHS 2010, 50% received syrups/pills as treatment, compared to 44% ORS or ORS/zinc [1]. The GoT and partners suggest that the drug budget is twice the expected amount (based on statistics) because providers are prescribing and ordering irrationally. As an additional rational use and demand barrier, the USAID/BASICS baseline qualitative survey also found that caregivers admitted to saving medicine by stopping treatment before all the medicine was used, especially when the medicine is in tablet or syrup form [7].

In terms of service provision extension via community workers (IEC and ORS only), there is currently little collaboration of efforts at the community level, and as such, there has been a multiplication of vertical and sectorial

efforts establishing parallel systems of community agents, such as Community Change Agents (CCA) for malaria, Community Based Distributors for family planning, PHASTs for WASH, CHW/IMCI agents for c-IMCI, and FastTrack for maternal health purposes. The multiplication of efforts is not only an inefficient use of already-limited resources, but has overwhelmed communities and created confusion in terms of care-seeking and treatment messages. The MOHSW feels strongly that this multiplication of effort is a waste and intends to introduce the new cadre of CHAs explained above in order to replace the CORPS and the multiple types of community agents.

2.2.1.2 Supply Barriers

Break-downs in the Tanzania supply chain impact essential medicine availability. As cited by Nesia Satoki Mahenge, "the findings of that report [Mariacher, G.G., (2008); "Drug Donation in Tanzania: Stakeholders' Perception and Knowledge"[2]] indicated that Tanzania has a 30% supply gap of essential medicines [9, pg. 50]." There are multiple reasons for this gap. The MSD cannot procure essential medicines without government funding, but insufficient funding, budget constraints and delays are common. If the MSD is stocked-out of an essential medicine, the process for facilities to get approval to procure elsewhere is cumbersome. As a result, facilities stock-up to avoid stock-outs, which can lead to drug expiration and waste [9]. [9]

Funding delays make it necessary to lengthen already long lead-times to procure internationally and then distribute the drugs to communities. Long lead-times require strict planning, and yet planning is one of the supply chain stumbling blocks. Given irregular reporting and use of the Health Management Information System (HMIS), errors in reporting, and inadequate HMIS training, the procurement data sent through the system is unreliable and often represents a mismatch between supply and demand. The Indent System described above, based on "pull" supply, has only been rolled-out in about 50% of the districts [10, pg.5] and the newly introduced Integrated Logistics System (ILS) will not finalize its roll-out until 2013. In areas where neither the Indent System nor the ILS have been rolled-out yet, facilities receive essential drugs rationed out based on a predetermined quantity ("push" supply) rather than demand. For those using the older "push" system, there is a regular mismatch between supply and demand. Capacity building in Logistics Management Information Systems (LMIS), HMIS, regular reporting supervision, and feedback loops is needed to help strengthen procurement planning, distribution and overall supply chain management. [9]

In terms of the budget constraints, the AED USAID-funded Point-of-Use Water Disinfection and Zinc Treatment (POUZN/AED) project found that initial seed stocks of essential medicines provided by donors, such as zinc, complement messaging, IEC and BCC efforts by ensuring the initial supply to respond to increasing demand [11]. Without this initial stock, procurement delays occur because the MSD is reluctant to take orders without proven demand, and the MOHSW is reluctant to promote IEC and BCC messaging throughout the system and to the community without a stock available [11]. An initial donor stock can help overcome this obstacle. As the system starts to flow around a particular donor-provided drug, the GoT supply chain system will kick-in so that the GoT can take-over procurement. In the case of zinc, an initial stock was provided in 2007 by UNICEF, and the GoT took-over national procurement from its budget starting in 2009 [11]. [11]

The Accredited Drug Dispensing Outlet (ADDO) Program that started under USAID/BASICS and is now being carried out by the TFDA supported by MSH and the Global Fund is a good complement to the public facility and supply circuit, helping to respond to some of its supply and service challenges. The Program has been successful and has provided much needed treatment and service, but its scale-up has been slower than expected [8]. Roll-out was supposed to finish in 2011, but was not completed. The new expectation is that all regions will have functioning ADDOs in 2012.

2.2.2 Diarrhea barriers

2.2.2.1 Patient, caregiver, and service provider barriers

Despite the fact that both ORS and zinc were approved by the TFDA as Over-the-Counter drugs in July 2009 [11], there still seems to be low awareness of the fact that zinc is OTC, which has limited its distribution, especially through CORPS. There are, however, health facility and CORPS refresher training on diarrhea using the updated IMCI guidelines and national training curriculum that include zinc policy and treatment information. The problem is that only 14% of service providers are up-to-date on IMCI trainings [12].

[2] Thesis Work. Available at: http://edoc.unibas.ch/858/1/DissB_8472.pdf. (Accessed on 29th June, 2010 at 5:30PM by Mahenge NS)

In terms of challenges, Tanzania has one of the highest ORS awareness percentages (80%) in Africa, but its use as treatment is still low (44%) and zinc use is negligible [1]. Besides the outcome expectations and skepticism related to treatments that require self-preparation described above in the cross-cutting section, the separate administration of ORS and zinc is a further barrier to its use. Research has found that Metronidazoles, such as Flagyl, anti-pyretics, and antibiotics are often cited as preferred treatment for diarrhea [7, 11]. And according to the TDHS 2010, of those who sought care for their sick child, 50% received syrups/pills as treatment, compared to 44% ORS or ORS/zinc [1]. USAID/BASICS research found that "Prescription practices for diarrhea treatment by both dispensaries and health professionals may be influenced by community expectations [7, pg.37]." In addition, regular supervisions and the provision of job aides and wall charts at the facility-level that could facilitate and promote rational treatment of diarrheal disease are insufficient.

2.2.2.2 Supply Barriers

A major challenge in the public sector is public facility stock-outs, despite stock piles expiring. Only 58% of public health facilities have non-expired zinc in-stock [13]. There is limited awareness among service providers of the importance of zinc, so they do not restock, as they do not prioritize it. Only 70% of the wards have at least one outlet with zinc [13]. UNICEF previously provided large stock piles, but found they were expiring and not being used. The priority barrier seems to be increasing demand for zinc among both caregivers and service providers, before focusing on increasing stock. With increased demand, service providers will order more stock and use it before it expires, and caregivers will demand stocks from private pharmacies, which will increase their order and stock of zinc.

2.2.3 Malaria barriers

2.2.3.1 Patient, caregiver, and service provider barriers

Important challenges exist related to over-diagnosis of malaria [6, pg. 32] in terms of both over self-diagnosis and service provider over-diagnosis. The result is under-reporting of other fever-based illnesses, such as pneumonia, and over-reporting of malaria prevalence. Service providers often diagnose fever as malaria, with or without a lab confirmation. Even when lab testing does come out positive for malaria, service providers often treat for whatever comes-up as positive, as well as for malaria, increasing treatment costs and budget. Another important challenge to rational treatment is stock-outs and irregular availability of ACTs and RDTs at public health facilities, especially in rural areas.

2.2.3.2 Supply barriers

There are important stock-outs and irregular availability of ACTs and RDTs at public health facilities, especially in rural areas. Given the recent policy change requiring parasitological diagnosis prior to treatment, these stock-outs and delays in rolling-out RDTs are an especially important barrier.

2.2.4 Pneumonia barriers

2.2.4.1 Patient, caregiver, and service provider barriers

The important challenges related to rational use of pneumonia treatment are closely linked to malaria challenges. Pneumonia is often misdiagnosed as malaria until it develops into severe pneumonia. Irrational drug use is reinforced by caretaker's resistance to treatments that require self-preparation, such as dispersible amoxicillin, and preference for crystapen injections and other antibiotics as treatment [7]. Service providers further support this irrational drug use by over-prescribing non-first-line treatment options, as cited above.

2.2.4.2 Supply barriers

The recent policy change in the first-line treatment of pneumonia from Cotrimoxazole to dispersible Amoxicillin brings with it several supply challenges. First of all, amoxicillin is more expensive than cotrimoxazole, which could cause both supply and demand barriers. Secondly, the GoT will probably not be able to buy it for the public sector until the next budget cycle (starting July 1, 2012), and yet the private sector is currently blocked from bringing in a supply of dispersible amoxicillin until it is registered with the TFDA. In the meantime, the MOHSW is currently keeping Cotrimoxazole as a first-line treatment option, but Cotrimoxazole penetration is only at 66% of eligible outlets [13].

2.3 Current MoH/Partners' Efforts and identification of priority areas

In response to the MDGs in general, both initially and more recently, the Government of Tanzania (GoT) has been proactive in establishing a series of policies that are supportive of moving forward aggressively. As outlined in *The*

National Road Map Strategic Plan To Accelerate Reduction of Maternal, Newborn and Child Deaths in Tanzania 2008-2015 [15], also known as the One Plan, Tanzania has been focused on improved maternal and child health services since 1974, and has introduced a series of policies, strategies and initiatives over the years, including the Expanded Programme of Immunization (EPI) in 1975, the Safe Motherhood Initiative (SMI) in 1989, the establishment of the Reproductive and Child Health Section (RCHS) within the MOHSW after the 1994 International Conference for Population and Development, and the adoption of the Integrated Management of Childhood Illness (IMCI) approach in 1996 [15, pg.1-2]. More recently, a Reproductive and Child Health Strategy was established (2005-2010), two National Road Map Strategic Plans were established (2006-2010 and 2008-2015), and maternal, neonatal and child health issues were integrated into the *National Health Policy and the National Strategy for Growth and Reduction of Poverty II, 2010*. The Ministry of Health and Social Work (MOHSW) work is also aligned with other enabling policies, such as the National Vision 2025, the Millennium Development Goals, Health Sector Reforms, the Local Government Reform Policy Paper, and the CCM Election Manifesto 2005 [6, pg.4-7]. Some of the key policies and strategies are outlined in the policy table below (Table 3).

The GoT has also initiated current policy and strategy efforts to further child survival efforts, such as the Better Medicines for Children project to introduce an Essential Medicines List for Children (EMLc) led by the MOHSW Office of Chief Pharmacists with the MOHSW Newborn and Child Health Unit, and in partnership with UNICEF, WHO and others. The EMLc work provides an important initial advocacy and policy base to help facilitate scaling-up essential medicines in Tanzania. Another important current task force has been looking into models and strategies to introduce a formal Community Health Worker (CHW) cadre in Tanzania that would revise policy to allow integrated Community Case Management (iCCM). Following the GoT need expressed in the *Primary Health Service Development Plan – MMAM 2007-2017* and in response to the health system human resource crisis in Tanzania, WHO and UNICEF are working with the Health Human Resource Department, the Health Promotion Unit and the RCHS, as well as consultative work with Ifakara Institute, to pilot a trial CHW model in two districts. The pilot was launched in July 2011. After review of the situation, both in terms of other country experience and the WHO/UNICEF CHW work, the MOHSW has decided to introduce a new cadre of health worker, called the Community Health Attendant (CHA), to replace the CORPS and to eliminate parallel community agent structures. As paid MOHSW personnel, the CHAs will be responsible for interpersonal communications and iCCM outreach from the public health facility to the village. The roll-out of the CHAs is a new development and has not begun yet. It is being prioritized and funded by the MOHSW and is expected to have an important positive impact on linking the community into the health system to help improve maternal and child health. The MOHSW's important decision to introduce the CHAs should be supported and integrated into child survival efforts to strengthen the effectiveness of CHAs in forming the link between the community and the health system.

The ADDO Program initially started by USAID/BASICS and now being carried-out by the TFDA with support from MSH and the Global Fund is another important initiative targeting vulnerable populations and rural communities. While nationwide roll-out is expected this year, further integration of the ADDOs into the health system overall, such as the MOHSW's health monitoring and reporting systems, and responses to its stock-out challenges will help strengthen the ADDO network's impact.

Partners have also been working with the MOHSW on interesting and innovative mHealth and eLMIS solutions to important training and supply chain management challenges. JSI/DELIVER started working with the MOHSW in 2002 on an Integrated Logistics System (ILS) and is now working on introducing an SMS reporting tool into the ILS system through the ILS Gateway. Novartis introduced and led a public private partnership with the MOHSW, Roll Back Malaria Partnership, IBM, and Vodafone under a project called *SMS for Life* to introduce SMS reporting for malaria stock management. The Novartis Foundation for Sustainable Development (NFSD) and the World Health Organization partnered to develop an e-learning tool for IMCI called the IMCI Computerized Adaptation and Training Tool (ICATT) that was adapted for Tanzania in 2009. These efforts provide an important innovative technology base that should be considered for supported scale-up and strengthening, given the cost-effective and innovative approaches.

Any new child survival effort or strategy will have to align with current GoT policies and strategies, as well as with other partner and project efforts to promote synergy, efficiency and country ownership. Main MNCH GoT policies and strategies are outlined in Table 3 below.

Table 3: Overview of Key GoT Policies and Strategies that Support MNCH

	United Republic of Tanzania Ministry of Health (2003). National Health Policy 2003 [16]	National Strategy for Growth and Reduction of Poverty II, 2010 [4]	Primary Health Services Development Programme – MMAM 2007-2017 [6]	The National Road Map Strategic Plan To Accelerate Reduction of Maternal, Newborn and Child Deaths in Tanzania 2008-2015 [15]
Supportive goals, objectives, targets	**2.4 Policy Objectives, especially 2.4.1:** • Reduce the burden of disease, maternal and infant mortality and increase life expectancy through the provision of adequate and equitable maternal and child health services **2.5 Policy Strategies, especially 2.5.1:** • From this Poverty Reduction Strategy, the Ministry of Health will use a greater proportion of the health budget to target cost effective interventions such as immunizations of children under 2 years of age, Reproductive and Child Health including Family Planning and control of Malaria, HIV/AIDS and TB and Leprosy **Structure of Health Services in Tanzania** 4.1.1 • The communities will have the mandate to choose their own community health worker who will be the main linkage between the community and the nearest health facility. The community health worker responsibilities will include, health education, and assisting in relevant public health interventions	**Goal 3:** Improved survival, health, nutrition and well-being, especially for children, women and vulnerable groups **Operational targets for addressing Infant and Child Health and Nutrition:** i. ***Under-five mortality rate reduced from 81 per 1,000 live births (2010) to 54 per 1,000 live births by 2015.*** ii. Proportion of under-five underweight (weight for age) reduced from 21 percent (2010) to 14 percent by 2015. iii. Proportion of stunted under-fives (height for age) reduced from 35 percent (2010) to 22 percent by 2015. iv. Prevalence of exclusive breast-feeding in children under 6 months increased from 50 percent (2010) to 60 percent by 2015. Relevant Intervention proposals: ii. Addressing disparities in health outcomes and services delivery by socioeconomicgroups and by urban/rural and districts;	**Aim:** the delivery of health services to ensure fair, equitable and quality services to the community. It "aims at empowering communities and involving them in health services provision [6, pg.8]." **Objective:** To accelerate provision of quality primary health care services to all by 2017. **Some key Specific objectives:** • To rehabilitate, upgrade and establish facilities at primary level to ensure equity and access of quality health care to all Tanzanians • To fast track capacity building, upgrading and on the job skills development for allied health workers. • To strengthen and maintain human resource database • To provide standardized medical equipment, instruments, pharmaceuticals and sundries to all primary health facilities • To ensure that the referral system is operational, and where necessary to establish teams of consultants to conduct mobile clinics and outreach services to support health facilities quality health care. • To increase financial allocation to the sector. Aim to attain the Abuja Call of 15% of annual budget.	**3.2 Mission**: To promote, facilitate and support in an integrated manner, the provision of comprehensive, high impact and cost-effective MNCH services, in order to accelerate reduction of maternal, newborn and child morbidity and mortality **3.3 Goal**: To accelerate the reduction of maternal, newborn and childhood morbidity and mortality, in line with MDGs 4 and 5, by 2015. **3.4 Objectives** 3.4.1. To reduce maternal mortality from 578 to 193 per 100,000 live births. 3.4.2. To reduce neonatal mortality from 32 to 19 per 1000 live births. 3.4.3. To reduce under-five mortality from 112 to 54 per 1000 live births. **3.5 Operational targets to be achieved by 2015: (relevant targets)** 3. New EPI vaccines introduced (Hib, Pneumococcal, Human Papilloma Virus (HPV) and Rota Virus vaccines). 7. 90% of sick children seeking care at health facilities appropriately managed.

	4.1.2: The Dispensary committee and Dispensary Management Teams will be established. Dispensaries shall provide comprehensive Primary Health Care services which will include the following (among others): Reproductive and Child Health Services, and Family Planning, Integrated Management of Childhood Illnesses (IMCI)	viii. Improving access and quality of obstetric care*; **strengthening referral systems; and preventing malaria incidences**;* x. Strengthening community care and involvement in the health of expectingmothers to ensure accessibility to basic services; xi. Preventing chronic diseases (malaria, TB, HIV and AIDS) which are majorcauses of death); xii. Systematically build up the capacity for procurement and supplymanagement for timely and adequate provision of medical supplies andpharmaceuticals.	**Related Program Components:** **5.1 Human resource for health** is the first priority increasing output both in terms of quantity and quality. **5.2 District health service** is the second priority component. Construction of 3,088 dispensaries, 19 district hospitals, 95 maternity waiting homes, 2,074 health centres. 250 dispensaries, 120 health centres and 54 district hospitals rehabilitated. 128 training institutions rehabilitated. Training provided to 15,000 youth peer eds and immunization outreach services to 8,000 villages. **5.3: Maternal, Newborn and Child Health**: reduction of maternal and under five mortality from 578 and 175 per 100,000 live births and 112 to 45 per 1000 live births respectively. Increase coverage of births attended by skilled attendant up to 88 percent by 2017. **5.4 Malaria**. Reduce the burden of Malaria by 80 percent by the end of 2017 **5.9 Environmental Health Sanitation** • Capacity building for environmental officers at district and ward level • Strengthen community participation **5.10 Health promotion and education**. Capacity building of the communities and individuals **5.12 Traditional and Alternative Medicine**, promotion and formulation of value added traditional medicine products and establishment and strengthening of registration of traditional health practitioners.	8. Increased coverage of under-fives sleeping under ITNs from 47% to 80% 9. 75% of villages have community health workers offering MNCH services at community level.

Table 4 below combines the barriers described above in Section 2.2 and the current and ongoing efforts by the GoT and partners to respond to these barriers. Elements in yellow highlight the domains of insufficient or lacking current efforts where this project will prioritize its efforts.

Table 4: Barriers and Efforts

	Patient		**Public sector supply/provision (incl. community-level)**		**Private sector supply/provision**	
	Barriers	**Current efforts**	**Barriers**	**Current efforts**	**Barriers**	**Current efforts**
Cross-disease	(a) Insufficient care-seeking behavior (b) Outcome expectations that syrups, antibiotics, prescription drugs and IVs are more effective (c) Missed opportunity to raise demand by raising child health awareness among fathers, traditional healers, birth attendants and mothers (d) Misunderstanding the importance of finishing a full course of treatment (e) Low consumer confidence in certain drug quality	(a) ADDO Program, PSI/Social Marketing, (b-e) No specific action.	(a) Poor coordination and linkages across the health sector (between dispensaries, community-level CORPS and private sector ADDOs). (b) Drug, supply, equipment procurement bottlenecks (c) Limited reporting/supervision associated with HMIS, and minimal c-HMIS (d) Over-prescription of non-first-line treatments (e) Insufficient/outdated public sector training (f) Need for updated iCCM policy officially introducing CHAs (g) HRH crisis (h) Vertical health programming (NMCP and NACP) (i) Poor mainstreaming of child survival	(a) Presence of health facility committee and district boards, and CHMT. Formal links have been outlined between dispensaries and CORPS and dispensaries and ADDOs, but not formalized or systematized. (b) JSI and CHAI focused on improving commodity info through scale-up of the ILS. Adaptation and scale-up of monitoring systems linked to systems needed (c) National IMCI policy links to HMIS. ICATT IMCI Training could link to HMIS. JSI and CHAI focused on reporting. (d & e) National IMCI policy exists with a National training curriculum for clinical and	(a) ADDO Stock-outs (b) Slow scale-up of the ADDO project (c) Drop-out of trained ADDO drug suppliers (d) Irrational drug sale by pharmacists/drug shops (e) ACTs and antibiotics are not OTC, limiting access	(a) MSH currently working with the Ministry of Agriculture to pilot the establishment of ADDO Associations. Stock reporting and monitoring support is needed (b) TFDA with MSH and Global Fund support is expecting to finalize roll-out in 2012. (c) No specific action (d) TFDA created to regulate, but there are still gaps. (e) No specific action.

			interventions and Village Health Committee plans into CCHP and Overall Council Plans (j) No comprehensive, in-depth assessment of child survival efforts and needs (k) Community agents work in silos (l) Attrition of trained CHWs (m) Poor coordination of partner work at the community level	community. Only 14% up-to-date on training. (f) WHO/UNICEF led effort to establish a context-appropriate formalized cadre of CHWs, based on MMAM, piloted in 3 districts. MOHSW decision to introduce CHAs will prioritize updating policies (g) ADDO project roll-out, MOHSW introduction of CHAs. (h-j) No specific action. (k, l, m) MOHSW decision to introduce CHAs		
Diarrhea	(a) Low awareness of Zinc among caregivers & providers (b) Insufficient/incorrect care-seeking behavior (53%) [1] (c) Outcome expectations favor syrups and antibiotics, rather than ORS/zinc. Resistance to treatments that require self-preparation (d) Continued and increasing practice of curtailing fluid intake when children have diarrhea	(a-c) POUZN/AED project ended (2005-2010), but a continued comprehensive BCC campaign is needed. Assessment of Community-based Child Survival Care and Treatment Dispensing in Tanzania (PSI). 8 IMCI per village, plus 2 original CHWs. WHO, MOHSW and MUHAS conducting OR to see if zinc and ORS can be distributed at grocery stores. MOHSW is working with UNICEF, WHO, and GAVI to add RotaVirus to EPI. MOHSW is working on strengthening cold chain capacity with support from CIDA and UNICEF. Diarrheal treatment corners have been re-activated in all but four regions. (c) Pilot of pre-packaged ORS/zinc	(a) Limited zinc awareness among community agents (b) Public facility stock-outs, despite stock piles expiring (c) Slow dissemination of changed policies regarding diarrhea treatment (d) Insufficient supervision, job aides and wall charts in facilities (e) Limited dissemination of policy change that ORS and zinc have OTC status has limited access	(a) National Zinc Task Force. 8 IMCI per village, plus 2 original CHWs. Diarrheal treatment corners have been reactivated in all but four regions. (b) GoT started to procure zinc from its own budget in 2009 [11]. Build on mHealth approaches in malaria (*SMS for Life*). Indent System/ILS (c) GoT updated IMCI guidelines and national training curriculum in 2007 and revised EML in Nov. 2007, but needs to be rolled-out.	(a) Low zinc market penetration and coverage (b) Separation of ORS and zinc, both in terms of packaging and solution (c) Private sector stocks less ORS than is actually needs, given low demand and ROI (d) Stock expiration due to limited purchase (e) Limited dissemination of policy change that ORS and zinc have OTC status has limited access	(a, c, d,) POUZN project ended (2005-2010). Assessment of Community-based Child Survival Care and Treatment Dispensing in Tanzania (PSI). PedZinc available from Shelys since 2007. Pilot of pre-packaged ORS/zinc combination in 2 districts. Consider mHealth approaches for stock reporting and management. (b) Pilot of pre-packaged ORS/zinc combination in 2 districts. Shelys is doing the

		combination in 2 districts. Shelys is doing the packaging. ZENUFA produces and sells zinc suspension. (d)No specific Action.		Consider ICATT IMCI (d) WHO response. (e) POUZN/AED project ended (2005-2010). Other: Strong WASH initiatives: SM of WaterGuard, MOHSW grants linked to national sanitations campaigns, PHAST CORPS, WaterGuard distribution via CCAs. Rotavirus vaccine as part of EPI could prevent some treatment.		packaging. (e)No specific action. Rotavirus vaccine as part of EPI could prevent some treatment.
Malaria	(a) Over-diagnosis of malaria creating excess demand for a malaria response (b) Use of ITNs less than access (c) Reduction in already insufficient care-seeking (65%) [1] (d) High ACT cost	(a) Technical Working Group for Malaria has reviewed the national policy for RDT use and developed a revised draft that allows RDT use at ADDOs. Needs approval and roll-out. CCAs introduced by PSI. A comprehensive rational diagnosis and treatment BCC campaign needed (b) Tanzania National Voucher Scheme. Social marketing of LLINs (PSI). Zero taxing on net and net materials policy. Multiple rounds of GFATM funding. Universal Coverage Campaign. Community-based net distribution initiatives. (c) ADDO project. PMI work on strengthening the capacity	(a) Service provider over-diagnosis of malaria (b) Stock-outs and irregular availability of ACTs and RDTs at public health facilities, especially in rural areas (c) Inadequate public health facility service provider training following NMCP guidelines (d) Inadequate public health facility Supervision (e) Questionable quality of IMCI/malaria focal point services (f) Missed opportunity to integrate other training into CCAs for	(a) Change from presumptive treatment to required parasitological diagnosis. RDT roll-out needed and a comprehensive rational diagnosis and treatment BCC campaign needed (b) Build-on mHealth approaches for Malaria ACT tracking (*SMS for Life*). ILS Gateway through JSI. PMI focus on ACT and RDT procurement, training and diagnostics. CHAI and JSI work on HMIS. Indent System/ILS. (c, d, e) PMI technical	(a) Slow scale-up and stock-out of the ADDO program (b) ADDOs and pharmacies not allowed to perform malaria diagnosis using RDTs (c) No local manufacturer currently has WHO/UNICEF GMP status to be able to produce and sell ACTs to donors (d) ACTs are not OTC, limiting access	(a) TFDA with MSH and Global Fund support is expecting to finalize roll-out in 2012. MSH currently working with the Ministry of Agriculture to pilot the establishment of ADDO Associations. Stock reporting and monitoring support is needed (b) Technical working group for malaria has reviewed the national policy for RDT use and developed a revised

		of the TFDA to develop a monitoring and reporting system for ADDOs. CCAs introduced by PSI. (d) Expansion of ACTs through ADDOs under PMI. Multiple rounds of GFATM funding, and supported by CHAI.	holistic child health promotion	assistance to malaria control program. Further training adaptation and supervision linkages needed (f)No specific action.		draft that allows RDT use at ADDOs. (c) Shelys is close, but needs final push. May happen this year. (d) No specific action
Pneumonia	(a) Misdiagnosis of pneumonia as malaria (b) Irrational drug use and preference for crystapen injections [7] (c) Insufficient care-seeking behavior (71%)[1] (d) Limited easy, cost-effective prevention options for pneumonia	(a) Technical Working Group for Malaria has reviewed the national policy for RDT use and developed a revised draft that allows RDT use at ADDOs. A comprehensive rational diagnosis and treatment BCC campaign needed (b) Assessment of Community-based Child Survival Care and Treatment Dispensing in Tanzania (PSI). Comprehensive BCC campaign is needed (c) ADDO Project scale-up will be finalized in 2012, but efforts to further strengthen quality of care and drug availability needed (e) No specific action.	(a) Lack of resources allocated to pneumonia (treatment data not collected since TDHS 1991-92) (b) Challenge of recent policy change to dispersible amoxicillin (c) Over-prescription of non-first-line treatments, especially IV/injections and syrups (d) Service provider misdiagnosis of pneumonia as malaria	(a) Pneumococcal vaccine approved as part of EPI. The vaccines are support by GAVI. May reduce treatment needs. MOHSW is working on strengthening cold chain capacity with support from CIDA and UNICEF. (b) Policy change Sept 2011 to dispersible amoxicillin. Interim, accept both. National IMCI policy exists with a National training curriculum for clinical and community. Only 14% up-to-date on training. (c & d) Introduction of RDTs. May not be sufficient to change provider behavior, so comprehensive BCC campaign needed. Increased IMCI training needed	(a) Low private sector market penetration (b) Dispersible Amoxicillin is not yet registered with the TFDA (c) Antibiotics are not OTC, limiting access	(a) Policy change to dispersible amoxicillin may help here, as will extending ADDO roll-out. (b) Specific action is required to push for rapid registration. (c) No specific action.

3. PROPOSED PROGRAM OF TARGETED INTERVENTIONS

3.1 Vision

Universal coverage in ORS/Zinc for diarrhea, ACTs for malaria and Dispersible Amoxicillin for Pneumonia requires a mix of interventions that respond to supply and service access, quality of services, and knowledge and demand in order to promote the rational use of services and treatments necessary for universal coverage. Since care-seeking is above average in Tanzania, focusing on the highlighted barriers in Table 4 above allows a comprehensive priority response to rational treatment, but in such a way that care-seeking will be promoted, as well. The barriers highlighted above are ones where either lessons learned have shown that there are successful solutions but that require supported scale-up and adaptation (diarrheal treatment corners, mHealth monitoring systems, ICATT IMCI)), or that there is a repeated, recurring gap (lack of supervision and coaching linkages at different levels, lack of coordination and confusion in messaging at the community level, lack of advocacy campaigns targeted at decision-makers, lack of response to consumer preferences in terms of medicine types), or that there is a cost-effective way to respond to several barriers with one solution (integrating the Community Health Fund into ADDOs, mHealth monitoring systems, ICATT IMCI). The proposed program vision and set of interventions are visually presented in the Results Framework in Annex 7.4 to show how they link back to rational treatment, universal treatment and, ultimately, MDG 4.

At the heart of this Strategy is a commitment to cost-effective, innovative solutions that play on the strengths of the public and private sector. One of the main strengths of the public sector in Tanzania is its established structure and design. The strategy is based on this structure and focuses on strengthening the internal training, monitoring, supervision, and linkages needed to improve service and drug delivery in innovative and cost-effective ways that move beyond traditional approaches. Tanzania has already proven its ability to harness the coverage and efficiency of the private sector for the good of the health sector through initiatives such as the ADDO project. This strategy applauds those efforts and looks to further many of Tanzania's proven successful solutions that require support in either being adapted, strengthened, or scaled-up.

Beyond the public and private sector, however, the community level must also be harnessed and linked into a triangle approach if universal coverage is the goal. Given the MOHSW's important commitment to introducing CHAs and the current technical partners' commitment to rolling-out the ADDOs, the Strategy aims to complement these efforts with a response to recognized gaps. In terms of ADDOs, the Strategy will focus on strengthening the network by responding to the stock issues they face and integrating the network into the Community Health Fund (CHF). In terms of CHAs, the Strategy will respond to the MOHSW's request for communication skills support for the new cadre. Both the ADDOs and CHAs are meant to play an important role in linking the community to quality care and treatment to promote universal coverage, and this Strategy supports those efforts.

Also at the heart of this Strategy is recognition that sustainability is required beyond initial financial partner support. Each intervention, therefore, kicks-off with a meeting to set a long-term financial roll-out plan that goes beyond donor funding to establish the vision for integration into Tanzania's health system and budget.

The MOHSW is committed to improving access to rational diagnosis and treatment in order to reach universal coverage and continue on its path toward fulfilling MDG 4 by 2015. This strategy and its vision are seen as essential to meeting these goals.

3.2 Overview of key deliverables & outcome targets

Key interventions	Main deliverables	Outcome targets	Desired impact
1.Expand TFDA registration Fast-Tracked Priority Products List and Register key EMLc Drugs	* Decision with NIMR, MUHAS and WHO regarding pneumonia first line treatment (dispersible amoxicillin or alternative) * The Ministry of Health and Social Welfare with support from WHO through Better Medicine for children initiative, developed essential pediatric medicines list for Tanzania. * Registration granted for dispersible amoxicillin and pre-packaged ORS/zinc * Initial stocks of dispersible amoxicillin and pre-packaged ORS/zinc (see Intervention 2) are available in-country for distribution. *Essential medicines should be integrated in to the current logistic supply chain for sustainability, however, for new medicines e.g. dispersible Amoxycilin, an initial push system for the first year will help to introduce the medicine and ensure accessibility.	Increase in Market Penetration (% of outlets nationwide with the drug): • Increase from 82%[13] to 95% for ORS • Increase from 56%[13] to 80% for zinc • Increase from 0% to 80% for dispersible amoxicillin • Increase from	Improve availability and accessibility of essential medicines and commodities for pediatric care at the facility and community level through the public and private sector by strengthening existing supply chain management systems
2. Roll-out of diarrheal treatment corners and launch of prepackaged ORS/zinc through the public and private sector	***Diarrheal Treatment Corners*** * Assessment and documentation of current diarrheal corner situation * Establishment of a long-term financial roll-out plan, including integration of corners into GoT budget *Introduction of diarrheal treatment corners in the four remaining regions * Design, printing and dissemination of additional job aides for diarrheal treatment corners ***ORS/zinc pre-packaging*** * Establish a long-term financial roll-out plan, including GoT budgeting for taking over procurement * ORS/zinc pre-packaging consumer/market research *Identify most viable business plans among pharmaceutical/manufacturing companies and establish MOUs for production, promotion, evaluation, etc. * Initial and continued ORS/zinc production * Prime the market and GoT supply system with an initial procurement * Pre-packaged zinc/ORS available in public health facilities * Conduct market activations and other marketing strategies * Conduct promotion and demand creation campaigns * Social marketing of pre-packaged ORS/zinc to ADDOs		
3.Adaptation and scale-up of proven mHealth monitoring systems (ILS	***SMS for Life*** * Establish a long-term financial roll-out plan, including integration into GoT systems and budget		

Gateway & *SMS for Life*)	*Integrate ORS/zinc, cotrimoxazole/dispersible amoxicillin and any other agreed EMLc drugs into *SMS for Life* tools and system * Identify and carry-out a cost-effective way to quickly disseminate the revised tool/additional information * Design an ADDO *SMS for Life* pilot * Evaluate and disseminate pilot findings * If successful, roll-out the *SMS for Life* model to as many ADDOs as interested ***ILS Gateway and Interface*** * Establish the long-term financial roll-out plan for ILS Gateway and the Interface, including integration into GoT systems and budget * Technological design of an interface between the *SMS for Life* and ILS Gateway systems * Initial training-of-trainers and a core group of system administrators * Support to phased roll-out of ILS Gateway and Interface to districts * Establishment of an ILS Gateway management and supervision system * Integration of ILS Gateway indicators into the motivation/incentives system developed in Intervention 5 below	66%[13] to 80% for cotrimoxazole (in interim waiting for dispersible amoxicillin) • Increase from x% to y% for ACTs (use ACTWatch Report when available) Increase % of CHF membership to the 23% peak reached in 1999[17]	
4.ADDO Network access strengthening (TFDA list, CHF integration)	* Situation analysis of current CHF management and fund use status * TFDA revision/update of the approved drug list for ADDOs * Design of a revised CHF scheme that includes ADDOs * Establishment of a long-term financial plan/vision, including integration into GoT systems and budget * Signature of service agreements between ADDOs and the CHF * Design of a promotional campaign to sensitize the population and market the new product * Linked roll-out of the integrated CHF product and the promotional campaign		
5. Roll-out of ICATT IMCI training and support mentoring program and incentives system to activate linkages (private and public)	***ICATT*** * ICATT was piloted both in pre-service institutions and in-service by support from WHO, evaluation was conducted in October 2010. Experiences, lessons learnt and way forwards was documented. ICATT was found to be more feasible and applicable in pre-service than in-service. Documentation is needed for the current IMCI including producing an inventory of IMCI facilitators and health care providers who are already trained to avoid retraining. The Ministry is proposing to roll out ICATT to pre-service institutions on experience and lessons learnt from the pilot. The Ministry is also proposing to conduct phased implementation of paper based dIMCI together with Mentorship program for in-service health care providers and to assess the introduction of ICATT into private facilities	Increase from 22%[5] to 80% of children under the age of 5 who had symptoms of ARI/pneumonia in the preceding 2 weeks who were given the appropriate treatment in accordance with national guidelines Increase from 44% [1] to 80% of children under	Improve ability of health care providers to provide quality pediatric care services and promote rational use of pediatric diarrhea, malaria and pneumonia essential medicines by building health care provider capacity across the

	however, introduction of ICATT to ADDO require further discussions with TFDA. * Establishment of a long-term financial roll-out plan, including integration into GoT systems and budget * Technical work to update the ICATT tools * Final roll-out of ICATT to the pre service institutions * Refresher training public health facilities and training pre-service facilities ***Incentives/Motivation System (such as PBF and Mentorship Program)*** <u>Pre 2015:</u> * Operational research and field-testing of different PBF approaches, supporting a Mentorship Program * Selection of best approach * Conduct mentorship to selected health facilities within the operational research area * Establishment of a budget and roll-out plan, including integration into GoT systems and budgets * Mapping of institutional embedding, and identification of mechanisms for fund holding, accountability and transparency, verification efforts, community involvement, mentorship structures, as necessary * Capacity-building of identified mechanisms in phase one * Negotiation and contracting of the price of indicators and the allocation of incentives with providers in phase one (more traditional PBF) * Implementation of contracted activities and performance-based financing in phase one (more traditional PBF) * Research to compare the outputs and outcomes in phase one areas to none PBF/Mentorship Program areas *Support roll out of existing P4P project, few indicators need to be added to capture diarrhea and pneumonia. <u>Most likely post 2015, but it depends on the speed of roll-out:</u> * Scale-up PBF/Mentorship Program to remaining phased areas	the age of 5 who had diarrhea in the preceding 2 weeks who were **given ORS packets or ORS+zinc.** Increase from 25.9%[1] to 80% of children under the age of 5 with fever who **received** ACTs within 24 hours of the onset of symptoms. 80% of targeted service providers correctly **managed** diarrhea, malaria and pneumonia according to national IMCI guidelines 80% of targeted service providers correctly **explain** prevention methods and rational treatment of diarrhea, malaria and pneumonia according to national IMCI guidelines	different sectors
6. Targeted advocacy campaign promoting the strategy at all levels	* Message and action plan development workshop with key stakeholders and partners * Establish a long-term financial roll-out plan, including integration into GoT systems and budgets * Advocacy meetings with key health decision-makers to promote the Strategy and ignite a "spark" throughout the health pyramid * Conduct district launch ceremonies * Identification of and participation in key stakeholder meetings	Increase from 22%[5] to 80% of children under the age of 5 who had symptoms of ARI in the preceding 2 weeks who were given the appropriate treatment	Increase informed demand for child health services by implementing comprehensive and integrated communication

	* Conduct site visits to model ADDOs and district to highlight and emphasize the strategy impact.	in accordance with national guidelines Increase from 44% [1] to 80% of children under the age of 5 who had diarrhea in the preceding 2 weeks who were given ORS packets or ORS+zinc. Increase from 25.9%[1] to 80% of children under the age of 5 with fever who received ACTs within 24 hours of the onset of symptoms. Increase from 71%[1] to 85% of children under the age of 5 who had symptoms of ARI/pneumonia in the last 2 weeks who were taken to a health care facility. Increase from 52.6%[1] to 80% of children under the age of 5 with diarrhea for whom advice or treatment was sought from a health facility or provider (including ADDOs) Increase from 64%[1] to 85% of children under the age of 5 with fever in the last 2 weeks for whom advice or treatment was sought from a health facility or provider	strategies promoting child health services, products, and behavior change
7. Targeted BCC campaign to promote rational diarrhea, malaria and pneumonia diagnosis and treatment	***Communication Support to CHAs*** * Identify IPC, community mobilization and medium media best practices and lessons learned in Tanzania * Design communications training structure for CHAs * Train to the new CHA structure on communication techniques, community mobilization, and key messaging * CHAs disseminating messaging through interpersonal communication and medium media channels ***Village Health Days*** * Identify any potential Public-Private partnerships possible in helping to fund village health days * Establish a long-term financing plan, including integration into GoT systems and budgets * Mobilize and organize the communities for the Village Health Days and establish district village health day schedules * Hold at least one village health day per quarter ***High-visibility mass media campaign*** * Identification of popular icon to act as spokesperson for the campaign * Design mass media campaign by considering events that transmit well over the radio, such as song concerts and soap operas * Conduct annual focus group discussions to help identify and prioritize messaging * Implementation of a high-visibility mass media campaign		

3.3 Detailed description of targeted interventions

1. Expand TFDA Registration Fast-tracked Priority Products List and Register key EMLc Drugs

Rationale:
As stated by Nesia Satoki Mahenge, "Regulation is a vital enabler of pharmaceutical supply chain [9, pg.21]," and in Tanzania, the TFDA plays a vital role in drug regulation, quality control and assurance, and pharmaceutical public and private sector inspections [9]. According to the TFDA guidelines, "Section 22 of the Tanzania Food, Drugs and Cosmetic Act, 2003 prohibits manufacturing and import for sale, sell, offer or supply any medicine unless the medicine is registered [18, pg.1]." Given that timely product registration is part of the first stage of a healthy supply chain, slow product registration can be an important hindrance to activating the rest of the supply chain to ensure timely access to needed essential medicines and products. The TFDA has clear registration guidelines that allot twelve months for regular new product registration [18], but fast track priority products for registration within 3 months. Priority products currently include ARVs, antimalarials, and AntiTBs. Other medicines essential to child survival and already included in the Essential Medicines List, such as pediatric pneumonia antibiotic treatments, and pediatric/Over-the-Counter diarrhea treatments are not included in the Fast-tracked Priority Product List, however, slowing-down their registration and thus contributing to the supply chain challenges linked to facility access and stock challenges. As an example, Tanzania recently approved a policy shift from cotrimoxazole as the first line treatment for pneumonia among children under five to dispersible amoxicillin. Without the needed TFDA registration, however, no importation or local production of dispersible amoxicillin is allowed, leaving the country without a supply of the drugs to fulfill or even start to fulfill the policy change. As another example, pre-packaging of ORS/zinc has been proposed as a need by stakeholders and is proposed as part of intervention 2 below, but beyond the actual work of determining the best pre-packaging combination and producing the kits for registration submission, an additional year is necessary to pass it through the TFDA for registration before it can begin to reach the caregivers and children who need it.

The purpose of this Intervention is to promote the timely registration of dispersible amoxicillin, new forms of ORS/zinc, and potentially other Essential Medicines List items in order to facilitate this stage in the supply chain and its role in ensuring availability and accessibility of essential medicines and commodities for pediatric care at the facility and community level through the public and private sector by strengthening existing supply chain management system.

Approach: Advocacy is necessary to promote an update and expansion of the TFDA priority product list to include essential medicines from the EMLc, including, at a minimum, pediatric pneumonia antibiotics and pediatric/OTC diarrhea treatments. Just as POUZN/AED did with the policy change necessary to introduce and register zinc, the Strategy will seek "ways to jump-start the process and to carry out groundwork that [will] stimulate fast action once policies [are] in place [11, pg.4]." Once the fast-tracked registration is in process, the Strategy will work with those who submitted the registration applications (international and/or national manufacturers/pharmaceuticals, etc.) to pave the way for quick production and distribution once the registration green light is given.

The RCHS will lead the advocacy and coordination effort with the TFDA. The RCHS will call on the EMLc working group to participate in initial list revision discussions to help determine which additional drugs to include in the expanded priority product list. Technical assistance will support overall coordination of the advocacy and registration efforts.

Actions and Main Deliverables:

(a) Stakeholder workshop, led by RCHS, to discuss the TFDA priority product list, EMLc drugs/products to include, and the next steps to take
    a. Action plan and long-term financing timeline (including integration into GoT systems and budget) identified
    b. Priority EMLc drugs/products to include identified
(b) Coordinate with NIMR, MUHAS and WHO to explore alternative pediatric pneumonia first line treatments other than dispersible amoxicillin
(c) Advocacy meetings with the TFDA to promote the importance of revising the priority product list
(d) TFDA meetings/working groups to revise the priority product list, following the TFDA process
(e) Jump-start meetings with international and local manufacturers/pharmaceutical companies to help facilitate production and distribution once registration is granted

(f) Registration granted for dispersible amoxicillin and pre-packaged ORS/zinc
(g) Initial stocks of dispersible amoxicillin and pre-packaged ORS/zinc (see Intervention 2) are available in-country for distribution.

2. Roll-out of diarrheal treatment corners and launch of prepackaged ORS/Zinc through the public and private sectors

Rationale:
IMCI was introduced in Tanzania in 1996 and was accompanied by a number of important commitments by the GoT, including the establishment of an IMCI coordinator and a national IMCI budget line item [19], the introduction of pre-service IMCI training, and the establishment of 8 zonal training central to support district IMCI training. The *IMCI Implementation in Tanzania: Experiences, Challenges and Lessons* report states that the WHO 1999-2002 Multi-Country Evaluation (MCE), including Tanzania, found that "IMCI improved quality of care for children under 5 years of age, reduced child mortality by 13% and was cost-effective [12, pg.1]." Worldwide, however, IMCI has faced important challenges in scale-up and sustainability, and Tanzania faces similar challenges. The *IMCI Implementation in Tanzania: Experiences, Challenges and Lessons* report says that "the WHO recommends that at least 60% of health workers seeing sick children in health facilities are trained in IMCI. However, the research reveals that national coverage of trained health workers [in Tanzania] was estimated to be only 14% [12, pg.2]." The challenges that IMCI has faced in Tanzania include the high cost and approach to IMCI training, as well as poor adherence to IMCI protocol, including "poor supervision practices [and] reluctance to refer [12, pg.2-3]." Given the high cost and approach to IMCI training, it is expensive to consider updating the IMCI Guidelines and national training curriculum, and disseminating it through refresher trainings. Under the POUZN/AED project, zinc was introduced into Tanzania and "New diarrhea management guidelines were adopted in February 2009 and the list of essential medicines was revised to include lo-ORS and zinc the following month [11, pg.19]." The challenge, however, has been disseminating the updated diarrhea treatment policies and guidelines throughout the whole health system to promote rational prescription and use of ORS/zinc. The expectation is for the new guidelines to be integrated into an update of IMCI guidelines and the national training curriculum, but given how expensive the integration and roll-out of the refresher trainings is and how often IMCI guidelines are evolving in the face of new evidence and science, the refresher trainings tend to be delayed until a certain mass of updates is accumulated. The result is that there is an important lag between policy change and service provider uptake and implementation of revised guidelines.

As a quicker solution, participants in the July 2008 annual IMCI malaria conference passed a resolution to revive "diarrheal treatment corners" in health facilities to promote diarrhea prevention and rational treatment [11]. Given the fact that ORS and zinc are considered OTC treatments in Tanzania, updated policy information can be disseminated without the full, official IMCI refresher training package, and through easy to understand job aides instead. This intervention is a cost-effective, quick fix that can immediately be implemented while waiting for the more robust IMCI ICATT training roll-out proposed in Intervention 5 below. Quickly fulfilling the diarrheal treatment corner gap and informing service providers of changes in treatment guidelines is an important step in promoting rational diarrhea treatment and universal coverage of ORS/zinc.

Another challenge linked to the IMCI service provision challenges, as well as overall consumer preference, is caregiver lack of compliance with revised guidelines. Tanzania has one of the highest ORS awareness percentages (80%) in Africa, but use of ORS for diarrhea treatment is still low (44%) and zinc use is negligible [1]. Availability of ORS and zinc is not the major issue impacting rational treatment, however. The goal of the POUZN/AED project 2005-2010 was to "introduce zinc along with low osmolarity ORS nationwide [11, pg.3]," but despite reaching this goal in terms of geographical introduction, "challenges remain – particularly in improving caregiver acceptance of zinc treatment and ORT [11, pg.vi]." Research has found that Metronidazoles, such as Flagyl, anti-pyretics, and antibiotics are often cited as preferred treatment for diarrhea [7, 11]. There is resistance and skepticism on the caregiver-side that treatments that require self-preparation, such as ORS, do not "cure" [11], and there is an outcome expectation that syrups are more effective than other types of treatment. According to the TDHS 2010, of those who sought care for their sick child, 50% received syrups/pills as treatment, compared to 44% ORS or ORS/zinc [1]. The marketing department of the local pharmaceutical firm, ZENUFA, felt so strongly that syrup was the consumer preference among caregivers and children that they produced their TFDA-registered zinc product in syrup form in 2010, instead of the usual tablet form [11]. Shelys, another major pharmaceutical firm in Tanzania, soon followed suit [11]. The separate administration of ORS and

zinc is a further barrier to its use, as it further complicates the self-administration process already disliked by consumers.

Consumer preference in Tanzania is clearly not in favor of the current, more-widely-available packaged forms of ORS and zinc on the market, and it is promoting irrational prescription and treatment practices. Qualitative research conducted by USAID/BASICS found that "Prescription practices for diarrhea treatment by both dispensaries and health professionals may be influenced by community expectations [7, pg.37]." The GoT and partners suggest that the drug budget is twice the expected amount (based on statistics) because providers are prescribing and ordering irrationally. New research and efforts are needed to supply public sector health facilities, including diarrheal treatment corners, markets and ultimately consumers with alternative ORS/zinc treatment options in order to promote rational treatment.

This Intervention proposes linking the scale-up and support of diarrheal treatment corners with the introduction of at least one type of pre-packaged ORS/zinc so that the diarrheal treatment corners can simultaneously respond to the IMCI training challenge lag, and respond to consumer preference to provide a double solution to promote rational prescription and compliance with diarrhea treatment guidelines.

Approach: Diarrhea Treatment Corners are a quick, intermediary fix to promote rational diarrhea treatment which was previously successfully used in Tanzania, but enthusiasm and funding slowed with the growth of vertical programs focused on diseases other than diarrheal disease. Given the recognition that re-focused effort is needed in terms of MCH, and diarrheal disease especially, the corners have been revived in all but four regions (Mwanza, Mara, Kagera and Shinyanga), and basic job aides, such as 20-30 wall charts per district, have already been provided. Additional support is needed for the initial meetings and material dissemination needed to set-up the diarrheal corners in all health facilities, and to support additional wall chart and job aide dissemination to ensure at least 2 wall charts per facility per district.

Research is needed to conduct consumer and market preference studies on the introduction of different types of pre-packaged ORS/zinc forms. The research should compare the introduction of the more traditional pre-packaged ORS sachet and zinc tablets as one form, pre-packaged ORS tetrapak and zinc tablets as a second form, pre-packaged ORS sachet and zinc syrup as a third form, and pre-packaged ORS tetrapak and zinc syrup as a fourth form. The research should analyze consumer preference for pre-packaging versus separate packaging, and preference among the four types of pre-packaging, as well as ability and willingness to pay. The ultimate goal of the research is to confirm whether or not pre-packaging will indeed improve consumer uptake, and if so, to identify which of the four types of pre-packaging are viable market options.

Based on the research, this Strategy will introduce the appropriate pre-packaging on the market (assuming pre-packaging is indeed preferred), will prime the market and the government supply system with an initial stock, including ADDOs, and will conduct market activation and other marketing strategies. The option to supply the first procurement in order to prime the private and public sectors is based on the POUZN/AED project report finding that "slow public sector procurement can affect uptake in countries with a large public health sector [11, pg. vi]." The POUZN/AED project found that the MSD was reluctant to stock zinc without a proven demand for the product, and the MOHSW was reluctant to promote the use of zinc without a sure supply [11]. POUZN/AED overcame this potential bottleneck by working with UNICEF to fund the initial procurement to be pushed out to public health facilities [11]. The POUZN/AED report further suggests this approach as a lesson learned, and so this intervention will integrate this recommendation into its approach. Sustainability in ORS/zinc procurement will be ensured by establishing a long-term GoT financing plan, including work with RHMTs and CHMTs to ensure that ORS/zinc is budgeted for in the CHMT budget, which is responsible for drug budgets at local health facilities.

This Strategy will promote production of the new ORS/zinc pre-packaged form(s) among local manufacturers, such as Shelys and ZENUFA. The POUZN/AED project 2005-2011 already proved that "African manufacturers can produce quality zinc treatment products for distribution both domestically and internationally [11, pg. vi]" and so the idea is to build on the base and public private partnerships established under POUZN/AED to take ORS/zinc production to the next level, based on consumer preference and market viability.

Work will be conducted with the appropriate departments of the MOHSW, including TFDA, MSD, the RCHS and the Newborn and Child Health Unit, PSU, RHMT/CHMTs, etc. As the overall Intervention lead, the RCHS will define

which of these departments, if not itself, should lead on this Intervention. Technical assistance will be necessary to conduct the consumer/market research, work with the private sector to develop viable business plans and design the appropriate pre-packaged forms, and test consumer uptake, as well as support coordination of the overall Intervention.

Actions and Main Deliverables:
Diarrheal Treatment Corners

(a) Assessment and documentation of current diarrheal corner situation: which corners are operational and why/how have they succeeded?, best practices
(b) Workshop with stakeholders in previous diarrheal treatment corner scale-up to review documentation, determine best roll-out plan for the four remaining regions, and any lessons learned from current situation
    a. Establishment of a long-term financial roll-out plan, including integration of corners into GoT budget
    b. Review and revise management guidelines and ordering protocols, as appropriate
(c) District advocacy and promotion meetings to introduce idea of diarrheal treatment corners in four new regions, and the roll-out plan with key service providers and supervisors
(d) Introduction of diarrheal treatment corners in the four remaining regions
(e) Additional printing and dissemination of wall charts (at least 2 per facility per district)
(f) Design, printing and dissemination of additional types of job aides for diarrheal treatment corners, based on lessons learned so far and need

ORS/zinc pre-packaging

(a) Conduct initial meetings with the MOHSW to discuss the Intervention, define the appropriate MOHSW lead, and define the plan of action
    a. Establish a long-term financial roll-out plan, including GoT budgeting for taking over procurement
(b) Conduct consumer/market research to confirm whether or not pre-packaging ORS/zinc will improve consumer uptake, and if so, which pre-packaged form(s) should be marketed
(c) Dissemination meeting to share and discuss research findings, including participants from the public sector (central, regional and district levels), the private sector and the community level
(d) Meet with local pharmaceutical firms to further discuss findings and develop business plans
(e) Identify most viable and agreeable business plans and establish MOUs with firms for production, promotion, evaluation, etc.
(f) Production of initial stock of pre-packaged ORS/zinc
(g) Visits to public and private sector providers to promote the new product, to be conducted by both GoT, technical partners and private sector partner (as part of MOU)
(h) Prime the market and GoT supply system with an initial procurement (especially through public health facilities, including diarrheal treatment corners)
(i) Continued production of pre-packaged ORS/zinc
(j) Pre-packaged ORS/zinc available in public health facilities
(k) Social marketing costs of pre-packaged therapy to ADDOs (including demand creation and market activations)
(l) Evaluate consumer uptake (baseline and evaluation)

3. Adaptation and scale-up of proven mHealth monitoring systems (ILS Gateway & *SMS for Life*)

Rationale:
Break-downs in the Tanzania supply chain impact essential medicine availability. As cited by Nesia Satoki Mahenge, "the findings of that report [Mariacher, G.G., (2008); "Drug Donation in Tanzania: Stakeholders' Perception and Knowledge"[3]] indicated that Tanzania has a 30% supply gap of essential medicines [9, pg. 50]." One of the reasons for the break-downs and bottlenecks has to do with the procurement and distribution system used. For many years, starting in 1983, Tanzania's health system drug procurement and distribution system was based on a kit system by which facilities receive essential drugs rationed out based on a predetermined quantity rather than demand [10]. Under this "push supply" system, there is a regular mismatch between supply and demand [9].

[3] Thesis Work. Available at: http://edoc.unibas.ch/858/1/DissB_8472.pdf. (Accessed on 29th June, 2010 at 5:30PM by Mahenge NS)

Tanzania has been taking important steps to pilot new systems to identify the best one to scale-up. According to the *Tanzania: Integrated Logistics System Pilot-Test Evaluation: Using the Logistics Indicator Assessment Tool*, the indent system was introduced in the 1990s by the Pharmaceutical and Supplies Unit (PSU) "to transfer drug ordering from the central to the district level [10, pg.3]." The indent system has currently only been rolled-out to about half of the facilities, however [10, pg.5]. The indent system is an important improvement in Tanzania's procurement system, in that it allows a transition from the "push supply" of the kit system to a "pull supply" based on demand and health district needs, reducing waste and stock-outs. In 2002, the MOHSW approached JSI/DELIVER for technical assistance in integrating the logistics systems of many of its vertical programs into an Integrated Logistics Systems (ILS). The ILS was meant to take the improvements of the indent system "a step farther by including most or all vertical programs and the EDP in the same system. The ILS introduced routine reporting of data coupled with routine ordering of resupplies, which enhances accountability and provides the central level with data for decision-making, particularly forecasting [10, pg.3]." From April-September 2005, the ILS was piloted in two regions, Dodoma and Iringa. Tanzania now has funding through 2013 to finalize the roll-out of the ILS to facilities nationwide.

A complement to the ILS system and routine data reporting has been the *SMS for Life* project, a public private partnership initiated and led by Novartis in partnership with the MOHSW, Roll Back Malaria Partnership, IBM, and Vodafone meant to "tackle the current anti-malaria supply chain challenges and improve the in-country supply, planning and access to ACTs by harnessing everyday electronic communication tools and mapping technology to improve information exchange and to bring visibility to stock levels of ACTs in the public sector [20, pg. 5]." Using weekly reporting of stock levels by SMS, district visibility of stock levels increased dramatically, allowing for corrective redistributions between health facilities to avoid overstock in one and stock-out in another, emergency replenishment, and improved forecasting for regular ordering [20]. The project started as a one year pilot in 2009, and by 2010 it had significantly reduced stock-out levels in the three pilot districts [20]. As expressed by Tanzania's Minister of Health, the Honorable David Mwakyusa, "the *SMS for Life* pilot project, designed to address this challenge, has been tried and tested in three districts of the country and, based on the results presented in this report, has showed remarkable success in keeping health facilities in those districts almost fully supplied with malaria treatments. The benefits for our health systems are potentially far reaching. Not only do we have the makings of a national stock management approach that can improve the availability of, and access to, lifesaving malaria drugs across the country, but we also have the possibility to apply this stock management approach to other essential health commodities [20, pg. intro]."

Currently, *SMS for Life* funding is limited to scale-up in the domain of malaria and antimalarials. Additional funding and technical assistance is recommended to be able to adapt and "use the *SMS for Life* solution to track other medicines of priority [20, pg. 45]," such as other essential medicines for children, especially the other two treatments emphasized in this strategy (ORS/zinc and cotrimoxazole/dispersible amoxicillin), but also other essential medicines for children such as ARVs and HIV test kits, etc. Once the *SMS for Life* system and tools are adapted, stakeholders and health partners have suggested that *SMS for Life* could play an important role in ADDO supply, planning and access to approved essential medicines, helping to respond to ADDO stock challenges. As such, operational research is suggested to test the roll-out of *SMS for Life* in select ADDOs and compare results to non- *SMS for Life* ADDOs. Based on research results and ADDO buy-in to covering costs, *SMS for Life* could potentially be rolled-out to cover ADDOs, as well. Financial and technical assistance is needed to adapt *SMS for Life*, conduct the research, and support roll-out.

For the public sector, the GoT and stakeholder recommendation is to actually switch from the *SMS for Life* model to the ILS Gateway, which is being developed and piloted by JSI, to allow for an SMS stock system linked to the whole ILS system. Financial and technical assistance is necessary to support the strategic roll-out vision for the ILS Gateway throughout the health public sector nationwide.

As a final step, the aim is to create an interface between the private sector *SMS for Life* system and the public sector ILS Gateway system. The different systems are best suited to their specific sectors, but an interface will allow communication and stock visibility between the public and private sector to help the overall health sector monitor supply, planning and stock to ensure availability, whether through public or private facilities.

Approach:

According to the pilot report, "The *SMS for Life* pilot was designed so that health workers in Tanzania used their personal cell phone to send a weekly SMS stock-count message. The district management and National Malaria

Control Program management used any internet browser on any PC, or alternatively a Blackberry device, to access the data system information. Training materials were provided to both management staff and health care workers, with follow-up training and resources provided as needed [20, pg. 2]." This intervention will build-on the design and network established, the materials put in place and the lessons learned to integrate weekly SMS reporting of ORS/zinc, cotrimoxazole/dispersible amoxicillin and ACTs, if not all essential medicines for children required of facilities. A review of the current system and its tools will be conducted to determine how to integrate new drugs and commodities. Coordination meetings will take place to determine with the *SMS for Life* partners if revised training materials are necessary. In terms of ADDOs, a technical partner will be engaged to design a short research study to compare the impact of *SMS for Life* roll-out on ADDO stock-out versus control ADDOs. Based on pilot findings, a recommendation will be made regarding roll-out. Assuming positive impact, roll-out will be negotiated with ADDOs based on their willingness to contribute to implementation costs.

The ILS Gateway roll-out approach will integrate the lessons learned from the pilot work begun by JSI. One lead from the GoT is needed to coordinate between the different departments and partners linked to the public and private sector approach. It is suggested that RCHS play the coordinating lead, and that PSU continue to technically lead the ILS Gateway roll-out, collaborating with the Chief Medical Officer, MSD, and TFDA, and that an appropriate technical lead be named for the *SMS for Life* component. Technical assistance is needed in terms of system adaptation, scale-up support, research/evaluation/documentation support, and coordination support.

Actions and Main Deliverables:
SMS for Life

(a) Conduct initial coordination workshops with the *SMS for Life* partners, the MOHSW and other potential key child survival stakeholders to discuss *SMS for Life*'s current roll-out status, technical ideas for integration of additional medicines, and recommended next steps
    a. Establish a long-term financial roll-out plan, including integration into GoT systems and budget
    b. Review the current training curriculum to determine if new information is necessary, prompting refresher trainings
(b) Meet with the partners working on the EMLc to determine whether the list is finalized, or whether a portion of it is finalized enough to be included in the *SMS for Life* tool. At the minimum, ORS/zinc and cotrimoxazole/dispersible amoxicillin should be included in the tool (ACTs are already included)
(c) Establish the necessary partnerships and MOUs to revise the *SMS for Life* SMS data tool
(d) If additional trainings are necessary, or additional information must be disseminated, identify a cost-effective way to quickly disseminate the additional information (through regional/district trainers, through district launch days, through regular supervision visits, etc.)
(e) Design a pilot to determine whether or not *SMS for Life* roll-out to ADDOs is a cost-effective way to combat ADDO stock-out
(f) Identify ADDOs willing to establish a public private partnership by which they cover their own costs to be involved in the study as an intervention area (use the *SMS for Life* public private partnership model to design these partnerships)
(g) Conduct an intervention versus control area pilot
(h) Evaluate and disseminate pilot findings
(i) If successful, use pilot findings to promote and advocate for the mutual benefits to an ADDO, and identify ADDOs nationwide interested in participating in a roll-out at their own cost
(j) Roll-out the *SMS for Life* model to as many ADDOs as interested
(k) Evaluate uptake and determine if integration should be an obligation for (re)accreditation

ILS Gateway and Interface

(a) Planning workshop with JSI, relevant MOHSW representatives and financial and technical partners to discuss the status of the ILS Gateway technological development, the long-term financial roll-out plan for ILS Gateway (including integration into GoT systems and budget), and implementation steps
(b) Technological design of an interface between the *SMS for Life* and ILS Gateway systems
(c) Initial training-of-trainers and a core group of system administrators to build capacity in ILS Gateway and Interface technology, use, management and training (consider using the 8 Zonal training centers to act as the Trainers)
(d) Support to phased roll-out of district training in ILS Gateway and Interface use and management
(e) Establishment of an ILS Gateway management and supervision system

(f) Regular mentoring in and supervision of ILS Gateway use monthly in the first three months, and every three months thereafter
(g) Integration of ILS Gateway indicators into the motivation/incentives system developed in Intervention 5 below

4. ADDO network access strengthening (TFDA list and Community Health Fund integration)

Rationale: According to the Tanzania MOHSW *Primary Health Services Development Programme – MMAM 2007-2017*, the whole public health services system in Tanzania is suffering from a 67.9% shortage in staff, which comes to a shortage of 31,808 staff [6]. "Governments that find themselves unable to address all their capacity shortfalls often look to the private sector to support the growth in demand [21, pg. 96]," and that is exactly the path that Tanzania has taken. According to the USAID/BASICS *Improving Child Health through the Accredited Drug Dispensing Outlet (ADDO) Program: Baseline Survey from the Five Districts in Tanzania, September 2006*, it was estimated in 2006 that there were "more than 6,000 DLDBs [Duka la Dawa Baridi, private drug shops] across all districts in the country; over 50 percent more than all public health facilities and 11 percent higher than all public, voluntary, and religious facilities combined [7, pg.1]," and in addition, the Strategies for Enhancing Access to Medicines (SEAM) Program[4] assessment in 2001 had shown that Tanzanians "frequently sought care from *Duka la Dawa Baridi*, which often had medicines in stock when public facilities did not [8, pg. 146]." As such, the country embarked on the ADDO Program to establish a network of privately-owned, regulated and accredited DLDBs that provide non-prescription and a limited number of essential prescription medicines from trained, quality-assured dispensers in more remote areas without easy access to public facilities [7]. The complete national roll-out of the ADDO network is expected to take place this year under separate funding.

To complement the effort put into establishing the ADDO network and reinforce its impact on furthering access to quality primary care services and quality treatment, continued strengthening of the existing network is needed. One of the issues ADDOs face is a limitation in the essential medicines they can distribute compared to the demand from caregivers, and another challenge is a fee-for-service and higher price structure than the public sector. Both create additional barriers to access. A child under five, pregnant women, and MCH services are entitled to free health care services at the public health facility under a statutory exemption, but distance, long wait times and frequent stock-outs are barriers to caregivers accessing such free care and treatment for their children, and so they often turn to ADDOs instead. As such, removing access barriers at the ADDO level is especially important to achieving universal coverage and health equity.

Several activities have already been defined as necessary to further strengthen the ADDO network access, such as updating the TFDA list of drugs approved for distribution at ADDOs and integrating ADDOs into the Community Health Fund (CHF). The CHF scheme was started in 1996 by the MOHSW as a pilot and has since grown and scaled-up. As stated in the Gemini Mtei and Jo-Ann Mulligan document *Community Health Funds in Tanzania: a Literature Review*, "The CHF is a form of pre-payments scheme designed for rural people in Tanzania (Munishi 2001). It is based on the concept of risk sharing whereby members pay a small contribution on a regular basis to offset the risk of needing to pay a much larger amount in health care user fees if they fall sick [17, pg.3]." Revenue from different funding going into the CHF, the majority of which is member fees, is meant to finance a basic package of health services at health centers and dispensaries [17]. The challenge is, however, that uptake has not been as high as the anticipated 30%[17] and referral services (hospitals and secondary services) and private services are not or are only minimally included. One of the findings from the Mtei and Mulligan literature review cited above was that the limited benefits coverage caused by not including referral and private services reduced the attractiveness of membership and could be a cause for limited uptake [17]. While "several studies have shown an improvement in the provision of and access to health care services after the introduction of CHF [17, pg.9]," challenges related to limited enrolment "could threaten the overall sustainability of the scheme [17, pg.7]." Given that "the CHF remains a crucial means for involving the community in health care financing and represents an important step toward universal coverage [17, pg.13]," it makes sense to focus efforts on aligning the benefits coverage with consumer preference for service delivery, such as integrating ADDOs into the scheme, in order to promote higher enrolment.

4 A Management Sciences for Health program funded by the Bill & Melinda Gates Foundation from 2000-2006.

Approach: The overall approach will be to respond to these two pre-identified access strengthening needs. Advocacy work with the TFDA will begin immediately to review and update the approved drug list for ADDOs, taking into consideration all the experience from the last several years of ADDO roll-out, and the revisions taking place via the EMLc.

In terms of the CHF, the focus will be on assessing the current status of CHF management and fund use at the district level to identify any major weaknesses that need to be addressed prior to integrating more benefits. Weaknesses in financial management and information systems have been identified in the past [17], and so the assessment will help to confirm whether or not and/or where these weaknesses still need attention. The next step will be to work with ADDOs to ensure a mutually beneficial service agreement between the ADDOs and the CHF, and to determine the logistics of how the integration will work in terms of membership, fund flow, management, etc. Finally, in case "the concept of insurance is [still] poorly understood among community members [17, pg. 4]" and in order to promote the improved CHF benefits package, a sensitization and promotional campaign will be conducted to market the new product and find new members.

The TFDA will continue to lead work associated with the ADDOs, including ADDO network access strengthening. The TFDA will coordinate with other stakeholders and MOHSW programs and departments for specific activities, such as the Counsel Health Services Boards, and ADDO representatives for the CHF ADDO integration activity. Technical assistance will be necessary to support the CHF situation analysis, technical and logistical integration of ADDOs into the CHFs, and to design a promotional sensitization and marketing campaign for the new product.

Actions and Main Deliverables:

(a) Situation analysis of current CHF management and fund use status at the district level
(b) ADDO and CHF situation analysis workshop to discuss with stakeholders
    a. ADDO situation update (ADDO locations, capacity, gaps), and lessons learned, as they relate to ADDO access
    b. CHF management and fund use situation
    c. Areas for action prior to and in-line with integrating ADDOs into the CHF
(c) RCHS-led advocacy meetings with the TFDA to discuss updating the ADDO drug list
(d) TFDA-led workshop to revise the approved drug list for ADDOs
(e) Design of a revised CHF scheme that includes ADDOs
    a. Including revision of existing manuals, logistical tools, management and fund use guidelines, training materials, and long-term financial plan/vision (including integration into GoT systems and budget)
(f) Advocacy meetings with ADDOs at the district level to promote integration into the CHF
(g) Development of mutually beneficial service agreements between ADDOs and the CHF/CHSB
(h) Signature of service agreements between ADDOs and the CHF
(i) Design of a promotional campaign to sensitize the population and market the new product
(j) Linked roll-out of the integrated CHF product and the promotional campaign

5. Roll-out of ICATT IMCI training and alignment with a motivation/incentive system to activate linkages (public and private)

Rationale:

IMCI was introduced in Tanzania in 1996 and was accompanied by a number of important commitments by the GoT, including the establishment of an IMCI coordinator and a national IMCI budget line item [19], the introduction of pre-service IMCI training, and the establishment of 8 zonal training central to support district IMCI training. The *IMCI Implementation in Tanzania: Experiences, Challenges and Lessons* report states that the WHO 1999-2002 Multi-Country Evaluation (MCE), of which Tanzania was one of the countries, found that "IMCI improved quality of care for children under 5 years of age, reduced child mortality by 13% and was cost-effective [12, pg.1]." Worldwide, however, IMCI has faced important challenges in scale-up and sustainability, and Tanzania faces similar challenges. The *IMCI Implementation in Tanzania: Experiences, Challenges and Lessons* report says that "the WHO recommends that at least 60% of health workers seeing sick children in health facilities are trained in IMCI. However, the research reveals that national coverage of trained health workers [in Tanzania] was estimated to be only 14% [12, pg.2]." The challenges that IMCI has faced in Tanzania include the high cost and approach to IMCI training, as well as poor adherence to IMCI

protocol, including "poor supervision practices [and] reluctance to refer [12, pg.2-3]." Important training challenges include:

- "The current 11-days IMCI training course [, which] places a big burden on the country's human resources keeping the workforce for a long time away from their respective facilities
- The process of updating the IMCI training materials and clinical guidelines [, as it] is a cumbersome, expensive and time consuming [process]…
- The availability of training materials [which] is a challenge for all institutions and districts carrying out IMCI training
- The availability of appropriate reference materials at both national and district level…
- …a great need for refresher training and follow-up with health workers who have already been trained in IMCI
- …a need for building and sustaining a conducive environment for health workers trained in IMCI to practice IMCI routinely during their daily work [19]."

In response to the training challenges faced by Tanzania and other countries, the Novartis Foundation for Sustainable Development (NFSD) and the World Health Organization partnered to develop an e-learning tool for IMCI called the IMCI Computerized Adaptation and Training Tool (ICATT). As defined in the *Global guidance-local knowledge: ICATT for adaptable training in the Integrated Management of Childhood Illness* brochure, "ICATT is an innovative computerized software application for IMCI. The tool makes it possible to adapt the IMCI guidelines at national and sub-national levels, and to develop ICATT-based training courses to support various training approaches [22, pg.1]." ICATT allows for flexibility in training and refresher training approaches, either through individual learning using a computer in in-service settings or in pre-service settings, group health worker classroom trainings with computers or a projector, distance learning using computers, computer/Internet or satellite-based facilitation, etc. [22]. ICATT also facilitates and speeds-up the introduction of IMCI updates, as integration into the software is easy without the need for mass paper reproduction and dissemination. While ICATT is not a stand-alone training tool, as practical application training sessions are needed to assess actual application with patients, it is a great theoretical training tool. Tanzania was one of the first countries to adapt and introduce ICATT in 2009 [19]. Initial results founds that "ICATT courses proved to be more cost-effective because no print outs are necessary and the course can be done in a shorter period of time compared to traditional IMCI training. This also allows more time for clinical practice. The feedback from students was also very positive, reflecting the user-friendliness and flexibility of the tool compared to other e-learning programs [23]." The findings suggest that the ICATT is a cost-effective way to respond to the IMCI training challenges that Tanzania is facing, and there is room for potential innovation to expand ICATT beyond the public sector to cost-effectively link accredited private sector facilities, such as ADDOs, into the refresher training network.

In terms of the challenges related to supervision and referral, they are not limited to poor adherence to IMCI protocol, but speak to a bigger weakness in linkages across the health system. Tanzania is considered to have one of the more stable and established health sector institutional architectures, compared to many developing countries. The structures in place have linkages defined on paper in terms of management, supervision, reporting and referral mechanisms. At the ward level, for example, the system has been set-up to link public sector dispensaries and ADDOs through referrals and supervision, and Dispensaries and CORPS through referrals and supervision. In practice, however, systematic implementation of supervision and referral is a challenge. Budget shortages, the health sector human resource crisis and demotivation have reduced the real operationalization of these linkages, impacting the quality of services provided. As stated in the *IMCI Implementation in Tanzania: Experiences, Challenges and Lessons* policy brief, "follow-up supervision is infrequent and doesn't always come within the recommended time due to a shortage of facilitators and funds [12, pg.2-3]." And while accredited ADDOs have been recently added to the institutional architecture in certain regions, no clear link has been established between them and CORPS, despite the fact that both target the same rural, vulnerable populations. There is a missed opportunity here for additional message reinforcement and referral. An intervention focused on reinforced linkages should also establish this missing link.

Unlike some countries, Tanzania's issue is not so much putting in place a structure to establish linkages, but rather "activating," motivating and facilitating the structures in place to dynamically fulfill their responsibilities. As stated in the document written by Ottar Maesard *Rewarding Safe Motherhood: How can performance-based financing reduce maternal and newborn mortality in Tanzania?*, "The Minister of Health in Tanzania has indicated that there is a need to motivate individual health workers to take increasing responsibility for improving the health services [24, pg. vii]." As such, the idea is to establish some kind of motivation/incentives system that facilitates activation of these linkages, either through a type of performance-based funding (PBF) system for the health sector or a Mentorship Program, in order to improve the "activation" of the supervision/coaching, reporting through the HMIS, and referral processes

required to ultimately improve the quality of service. As stated in the Jurien Toonen et al. document *Learning Lessons from Implementing Performance Based Financing, From a Multi-Country Evaluation* "PBF brings the attention to downstream accountability and transparency, to the operational level, where the results are focused on delivering more and better quality healthcare for the ultimate beneficiaries. So, PBF is about improving the performance at service delivery level [25, pg. xii]." PBF may be a good solution, but operational research and field-testing are needed to propose the appropriate design. If more traditional PBF approaches are not seen as the appropriate solution, then at the minimum, capacity needs to be built within the MOHSW structure to promote coaching and mentoring through a Mentorship Program.

Approach:

To-date, it is estimated that about two-thirds of Tanzania's public sector facilities initially integrated ICATT use, but it is unclear whether it is being used to its full potential. Documentation of the current ICATT situation and lessons learned is needed. ICATT was initially piloted in Tanzania for use in pre and in-service training. Current lessons learned suggest that it is most effective in pre-service training, and not as much in in-service training. The documentation should speak to these concerns to make recommendations regarding the most effective use of ICATT in the public sector. Whether or not the lessons learned ICATT documentation recommends adaptations to the current Tanzania ICATT set-up for continued use in public sector in-service training or not, the MOHSW would like to compare these recommendations to potentially rolling-out a Mentorship Program based on the WHO's paper-based distance learning IMCI (dIMCI) experience in South Africa [26]. According to Dr. Lulu Muhe's *Paper-based Distance Learning IMCI – experiences from South Africa* presentation, the model is a "primarily learner-driver model" with a "flexible self-study structure [that] saves time and travel, thus more healthcare providers can be trained in IMCI [26, pg.2]." The trainings are grouped into modules, allowing flexibility in blending the self-study with "face-to-face meetings with facilitators for orientation, review of study and practice," "group study/group clinical practice," "access to a mentor/tutor in person, or thru mobile," "practicing IMCI skills in home facilities" [26, pg.3]. It is meant to facilitate in-service training among health workers who cannot easily leave their facility for multiple-day off-site trainings. Materials include self-contained modules, a facilitator guide and logbook for progress assessment. The course is grouped into two self-study periods, with a suggested 4 weeks for the first section, and 6 weeks for the second session, accented by three mentor visits (an initial orientation meeting, a practice & review meeting between the two self-study periods, and a final synthesis meeting). The pilot findings in South Africa were that the approach was effective in terms of skills training (positive results in final exam skills recognition and IMCI multiple choice questions (although not as strong)) and affordable in that it was about three times less in Rand and HR costs than the traditional IMCI in-service training approach [26].

Given the success of dIMCI in South Africa, the MOHSW proposes to introduce the approach into an overall Mentorship Program already started under Global Fund Round 7. Under Round 7, each RCHS Zonal Coordinator was named to oversee a group of mentors in his/her zone. Mentors included healthcare providers such as pediatricians and senior clinicians. Mentors have been trained in three zones, but funding is needed to finalize mentor training and support the costs of mentor supervision and coaching visits.

During the ICATT documentation review workshop, areas where ICATT it is not being used efficiently or effectively should be discussed in order to determine an action plan to respond to these areas, the materials within ICATT should be updated, and the integration of RDT training should be considered. During this workshop, it will also be determined whether to test an updated/improved ICATT in-service training tool in the remaining facilities not yet using ICATT, or to test dIMCI within a Mentorship Program, or to test and compare both. Either way, in the remaining facilities, ICATT pre-service training will be rolled-out, and a test form of in-service training will be introduced.

After roll-out to the remaining public sector facilities, the results from the in-service training approaches will be evaluated and a determination made as to what in-service training approach to continue using in the facilities nationwide. No matter what is recommended and chosen regarding in-service training, the Mentorship Program mentoring and coaching aspect is an important part of ensuring quality IMCI. Please see the paragraphs below regarding the motivation/incentive system proposal to see the suggestions regarding the Mentorship Program in terms of linkages.

Beyond the final scale-up of ICATT IMCI in the public sector, operational research and field-testing should be conducted to assess the feasibility and cost-effectiveness of its roll-out to ADDOs and other appropriate private sector

facilities (about 700 facilities) to facilitate regular refresher trainings and updates. Given that the ICATT system allows for flexibility in terms of training materials for different sets of trainees, the trainings could be adapted to ADDO and private sector needs, and RDT trainings could be integrated if/when necessary. In terms of the private facilities with medical professionals, it is expected that adaptations to the current public sector ICATT IMCI tool and modules will be minor. In terms of the ADDOs, however, given that they are not run by medical professionals and that most do not have computers, a larger adaptation will be required to not only revise the modules to fit ADDO training requirements, but also to use more of the classroom-style setting with the facilitator using a computer to project the ICATT/ADDO trainings, rather than the other forms of training available under ICATT. Given ICATT's flexible base, however, it is expected that adaptation will be possible to ensure a cost-effective roll-out to ADDOs.

In terms of the motivation/incentive system to activate linkages, while studies show that PBF can be a promising approach [25], "introducing the PBF approach requires operational research and field-testing of different approaches to understand which one leads to the most sustainable and successful result [25, pg. xii]." Given Tanzania's established institutional architecture, operational research and field-testing will help to define the best institutional embedding of mechanisms for fund holding, accountability and transparency, verification efforts, and community involvement [25], if PBF is chosen, or to define another motivation/incentive system. The research will also help to define whether it will be more effective to take an institutional or individual approach to incentives, and what intrinsic and/or extrinsic motivations to consider [24]. The aim under this Strategy and by 2015 is to fulfill the research, identify the best PBF or motivation/incentives approach with buy-in from the national government, and begin to implement it in a phased approach. Based on the lessons presented in the Jurien Toonen et al. document *Learning Lessons from Implementing Performance Based Financing, From a Multi-Country Evaluation*, the GoT will "participate from the start in piloting the approach [25, pg. xii]," and establishing the proper phased approach for the context [25].

If, during the process, a more traditional PBF approach is not determined to be the appropriate approach to activate linkages, then, at a minimum, a roll-out of the Mentorship Program should be considered to promote proper coaching and mentoring and the establishment of incentives. As described above, the MOHSW started to establish a Mentorship Program under Global Fund Round 7, and groups of mentors have been trained under the oversight of the RCHS Zonal Coordinator in three zones. If found to be more appropriate than PBF, the approach would focus on finalizing the capacity building of the zonal RCH Coordinators and the cadre of mentors to establish a mentorship framework in their zones, and to roll-out a mentorship coaching visit schedule and structure.

The RCHS will take the lead for the GoT, working in close collaboration with different departments and groups within the MOHSW, including the RCHS/Newborn and Child Health Unit, and an identified technical partner to provide ICATT and PBF technical assistance. Documentation and adaptation of ICATT requires specific technical capacity, and PBF studies and lessons learned have shown that it relies heavily on financial support and technical support in the beginning, due to the need for PBF capacity building and creating "necessary precondition for scale up [25, pg. xi]." Financial and technical assistance is needed both in terms of documenting ICATT experience to-date and supporting any revisions before the final roll-out, designing the research and potential introduction of the ICATT in ADDOs and the rest of the private sector, and in PBF assessment, design and introduction.

Actions and Main Deliverables:

ICATT

(a) Documentation is needed for the current IMCI including producing an inventory of IMCI facilitators and health care providers who are already trained to avoid retraining. Roll out ICATT to pre-service institutions on experience and lessons learnt from the pilot. Conduct phased implementation of paper based dIMCI together with Mentorship program for in-service health care providers and to assess the introduction of ICATT into private facilities however, introduction of ICATT to ADDO require further discussions with TFDA.

(b) Documentation dissemination workshop with key stakeholders to discuss lessons learned, recommendations, weaknesses and to determine:
    a. Long term financial roll-out plan, including integration into GoT systems and budget
    b. System updates, including a discussion on RDTs training integration
    c. Whether to introduce an adapted ICATT in-service training tool into the remaining public facilities, the dIMCI Mentorship Program for in-service training, or both for comparison purposes
    d. Whether or not to pilot it in ADDOs
    e. Whether or not to pilot it in private facilities

(c) Technical work to update the ICATT tools

   a. consider integrating communication training in how to use the C4D (Communication for Development) materials
(d) Field visits to respond to areas with identified ICATT challenges
(e) Final roll-out to remaining one-third of public sector facilities
(f) Refresher training to all public health facilities already trained
(g) Training to regional training facilities and pre-service facilities
(h) Evaluation of adapted ICATT IMCI in-service training versus dIMCI and determination of best approach for continued public facility in-service training
(i) Advocacy meetings with ADDOs and other private facilities to promote the integration of ICATT tools into their systems and to discuss their concerns and needed incentives
(j) Adaptation of ICATT (modules and training format) for ADDOs, and design of roll-out to ADDOs
(k) Roll-out of ICATT to established ADDOs
(l) Adaptation of ICATT for the private sector facilities and design of roll-out to these facilities
(m) Roll-out of ICATT to established private facilities

Incentives/Motivation System (PBF or Mentorship Program)
Pre 2015:

(a) Operational research and field-testing of different PBF approaches, including a Mentorship Program
(b) Engagement with all local and national level health management and providers to discuss and analyze research results
(c) Selection of best approach
(d) Communication and promotion of approach to health sector management and providers
(e) Establishment of a long-term budget and roll-out plan, including integration into GoT systems and budget
(f) Mapping of institutional embedding, and identification of mechanisms for fund holding, accountability and transparency, verification efforts, community involvement, mentorship structures, as necessary
(g) Identification of general Maternal & Child Health indicators for PBF/Mentorship Program verification
(h) Capacity-building of identified mechanisms in phase one
(i) Negotiation and contracting of the price of indicators and the allocation of incentives with providers in phase one (more traditional PBF)
(j) Implementation of contracted activities and performance-based financing in phase one (more traditional PBF)
(k) Research to compare the outputs and outcomes in phase one PBF/Mentorship areas to control areas

Most likely post 2015, but it depends on the speed of roll-out:

(a) Assuming positive results from pre-2015 activities, scale-up PBF/Mentorship Program to remaining phased areas, following the long-term budget and roll-out plan

6. Targeted advocacy campaign promoting the Strategy at all levels

Rationale:

A communication campaign to focus on promoting the overall Strategy and EMI approach to service providers, local government (especially CHMTs managing the local budget), parliamentarians, community decision-makers and private sector representatives is needed. Advocacy is needed to ensure buy-in to the overall Strategy by explaining its important contribution to Tanzania's national policies outlined in Section 2.3, Table 3. Additional advocacy is needed to promote the public-private partnership approach so that the participation of other sectors, such as the private sector and community level, is seen as integrated into the health sector approach, and not as a separate competitor or something useless. One way actual buy-in will be measured is by the increase of money earmarked for IMCI and strategy activities in local budgets. Experience in Tanzania has shown that a communication campaign targeting decision-makers at different levels can help with the buy-in to new sector health approaches, but only if the decision-makers are involved from the beginning in the launch of the activities. PSI/Tanzania attributes one aspect of the success of its ITN work in Tanzania to the work it did to involve policy makers in the campaign from the beginning. Under PSI's ITN work, net retreatment campaigns were held to launch the campaign with the Regional Commissioner as guest of honor. The launches were used to talk about the importance of nets to health and the proper use and treatment of nets. The members of the health sector under the Regional Commissioner came to the launch, since the Regional Commissioner was the guest of honor. Given the integration of officials from the top-down, it was easier for all levels to adopt and embrace the approach. The POUZN/AED project (2005-2010) also had a similar experience.

The POUZN/AED report states, "Advocacy with high level medical influencials in the very first months of the project provided the first sparks at the 'top of the medical pyramid' for a cascading process of awareness raising and support for zinc [11, pg. 9]." POUZN/AED worked with major professional associations at public and private hospitals, top medical professionals, and integrated POUZN/AED messages into high-level meetings that the upper-tier of health providers already attend, such as the annual IMCI malaria conference, Vitamin A supplementation meetings held at the zonal level, etc. [11]. By achieving buy-in from the top-down, there is more overall buy-in and pressure is then put on CHMTs to budget for supporting activities to ensure their implementation.

Approach:
Building-off PSI/T's experience and the POUZN/AED (2005-2010) project's experience, the approach will be to target and integrate top-level decision-makers and service providers from the top down with the intension of ultimately achieving larger local budgets earmarked for IMCI and strategy activities. The expectation is that their involvement will promote buy-in to the strategic approach and a positive cascade of communication that starts with them and runs down through the health system. Launch events will be organized and developed with regional officials and the appropriate guest of honor to promote the EMI Initiative and this Strategy. Advocacy with high level health decision-makers will take place from the start of implementation in order to ignite the "sparks" described by POUZN/AED at the top of and throughout the health pyramid. The strategy coordinators will also look to identify key stakeholder meetings, including CHMT budgeting meetings, to help coordinate and to attend in order to integrate key communication messages about the Initiative, the Strategy and the approach. Finally, Intervention 6 will promote site visits to model ADDOs and districts to highlight and emphasize where the approach is having a strong impact.

Actions and Main Deliverables:

(a) Message and action plan development workshop with key stakeholders and partners
    a. Establish a long-term financial roll-out plan, including integration into GoT systems and budgets
(b) Advocacy meetings with key health decision-makers, including Regional Coordinators, parliamentarians, and CHMT members, to promote the EMI Initiative and this Strategy, integrate any suggestions they have, and ignite a "spark" throughout the health pyramid
(c) Establish district launch schedules, and line-up guests of honor, and speeches. Ensure CHMT attendance/involvement
(d) Conduct district launch ceremonies
(e) Identification of and participation in key stakeholder meetings (such as the annual IMCI malaria conference, Vitamin A supplementation meetings, CHMT budget meetings, etc.)
(f) Conduct site visits to model ADDOs and districts to highlight and emphasize the strategy impact.

7. Comprehensive BCC campaign to promote rational diarrhea, malaria and pneumonia diagnosis and treatment

Rationale:
Ensuring availability of treatment alone will not ensure its proper and rational use or sustainable demand for its existence. Behavior change necessary to demand rational treatment is required at both the caregiver and provider level. In Tanzania, there are important barriers related to outcome expectations on both the caregiver and service provider sides that antibiotics, prescription drugs, IVs and syrups are more effective than other types of treatment. The preference leads to increased demand for certain prescription drugs, increasing their stock, and reduced demand for other prescription drugs and non-prescription drugs, such as ORS/zinc, reducing their stock. Using the case of pneumonia as an example, the USAID/BASICS *Improving Child Health through the Accredited Drug Dispensing Outlet Program* 2008 baseline qualitative survey found that mothers cited crystapen injection as the preferred treatment for pneumonia [7]. The report also cited high rates of service providers prescribing IV/injections and antibiotics rather than the first-line treatment [7]. In terms of malaria, the *How can malaria rapid diagnostic tests achieve their potential? A qualitative study of a trial at health facilities in Ghana* article by Clare IR Chandler, Christopher JM Whitty, and Evelyn K Ansah stated, "Peer and patient pressure were found to influence clinicians in their overdiagnosis of malaria in the face of microscopy results [27, pg. 11]." *An assessment of dispensing practices in private pharmacies in Dar-es-Salaam, Tanzania* conducted by Godeliver A.B. Kgashe, Omary Minzi and Lloyd Matowe found that "In Tanzania, an overwhelming proportion of medicines sold in pharmacies are dispensed without a prescription. The majority of medicines dispensed without a prescription are either requested by the client or recommended by the dispenser [28, pg. 30]." These findings suggest that consumer and provider preference play a huge role in what is diagnosed as the problem and

then prescribed and used as treatment, often overriding diagnosis and first line treatment policy regulations. The GoT and partners suggest that the drug budget is twice the expected amount (based on statistics) because providers are prescribing and ordering irrationally. Given the above reality regarding the influence of consumer and provider preference on rational treatment, the POUZN/AED *Introducing Improved Treatment of Childhood Diarrhea with Zinc and ORT in Tanzania* report found that "Sustained education and promotional efforts are required to ensure appropriate practices among prescribers, drug sellers, and caregivers [11, pg. vii]."

Tanzania has a rich array of existing or previously existing communication platforms and campaigns to build-on in designing a comprehensive BCC campaign at all levels to promote rational use of child survival treatments. There are many vertical and sectorial efforts establishing parallel systems of community agents for the dissemination of IEC and BCC messages, the collection of community data, and sometimes, depending on the project, the distribution of a product. Tanzanian policy currently promotes c-IMCI and the distribution of ORS via 8 trained CORPS (Community-owned Resource Persons) per village plus two Community Health Workers, but does not allow the distribution of any other child survival treatments. Other parallel community agents include Community Change Agents (CCA) for malaria, Community Based Distributors for family planning, PHASTs for WASH, CHW/IMCI agents for c-IMCI, and FastTrack for maternal health purposes. The MOHSW has recognized that this multiplication of efforts is not only an inefficient use of already-limited resources, but has overwhelmed communities and created confusion in terms of care-seeking and treatment messages. The MOHSW has, therefore, decided to introduce a new cadre of health worker called the Community Health Attendant (CHA) to replace the CORPS and the parallel community agent structures. As paid MOHSW personnel, the CHAs will be responsible for interpersonal communications and iCCM outreach from the public health facility to the village. The roll-out of the CHAs is being prioritized and funded by the MOHSW, but there is a need for additional financial and technical assistance in providing practical communication training and tools to the new CHA cadre. An important element of Intervention 7, therefore, is communication support to the new CHA cadre.

The previously successful village health days model should also be revived as a platform for communication dissemination, and the new ADDO network should not be left-out as a key message dissemination platform. As described in the *Nutrition-Relevant Actions in Tanzania* country case study by Festo P. Kavishe, village health days are "a concentrated event: colourful, packed with virtually all top district and regional leaders and functionaries, some visiting the village or being seen by the villagers for the first time - indeed, a mixture of serious business with pleasure (lectures, immunization and child-feeding on the one hand, and poetry, "ngonjera" and songs on the other). The presence of so many important people in the village shows the importance attached to the activity by the leaders and this, if reinforced, will have a long-lasting impact on the villages and their nutrition programmes (Mushi, 1988:25) [29, Chpt 8]." The new CHA cadre should be involved in helping to revive these village health days as key health message dissemination venues. Tanzania also has active Community-based and Faith-based Organizations which can be integrated into the work with the CHAs and village health days to further disseminate positive health messages.

Approach:

The communication campaign will be a multi-channel approach that segments the different population groups to identify the best communication approach for each segment. At the interpersonal level, the focus will be on providing practical communication training and tools to the new CHA cadre. For medium and mass media, the emphasis will be on reviving Village Health Days and use of the radio. In terms of the radio, the POUZN/AED project found, "The TDHS 2004 indicated 58 percent of families owned radios. The Tanzania All Media and Products Survey (Steadman 2005) indicated 95 percent of the population listened to radio at least once a week [11, pg. 14]." Intervention 7, therefore, will use the radio to launch a high-visibility mass media campaign featuring a key star or popular figure. Malaria No More's experience in Senegal with the *Surround Sound: Senegal* campaign "activates key sectors of Senegalese society—including entertainment, sport, faith, local business and government—to encourage people to use mosquito nets, to recognize malaria symptoms and to seek treatment [30, pg. 15]." Inspired by this experience, a high-visibility song concert or soap opera or other type of edutainment campaign will be conducted over the radio to nationally disseminate key health messages and promote rational diagnosis, prescription and treatment of child survival medicines.

RCHS and the Health Education Unit will lead the diagnosis and treatment BCC campaign, with support from other MOHSW departments and technical assistance. Technical assistance will initially support the design and development of the campaign, including message development using focus group discussions and communication channel assessment, communication support to the new CHA cadre and the long-term technical and financial roll-out plan. Since there does not seem to be much documentation of best communication practices in Tanzania, technical assistance will also help evaluate and document lessons learned and best practices.

Actions and Main Deliverables:

(a) Stakeholder workshop to discuss past BCC campaign best practices and lessons learned and to establish a long-term financial roll-out plan, including integration into GoT systems and budgets

Communication support to CHAs

(a) Smaller stakeholder workshop to further discuss interpersonal communications (IPC), community mobilization and medium media best practices and lessons learned in Tanzania
(b) Design of communications training structure for CHAs, including adaptation of existing IPC manuals, tools, procedures, and policies
(c) Training to the new CHA structure on communication techniques (IPC and medium media), community mobilization, and key messaging
(d) CHAs disseminating messaging through interpersonal communication and medium media channels

Village Health Days

(a) Conduct a stakeholder meeting to discuss village health day lessons learned from the past, and recommendations for the revival
(b) Conduct outreach and advocacy meetings with potential private sector partners at the district level to identify any potential public private partnerships possible in helping to fund village health days
(c) Establish district village health day schedules, and line-up high-level visitors, guests of honor and speeches
(d) Work with CHAs to mobilize and organize the communities to prepare songs, dances, presentations, sports events, and other village health day activities
(e) Hold at least one village health day per district per quarter

High-visibility mass media campaign

(a) Identification of popular celebrities, sports stars, officials or other pop culture icons that could act as spokesperson for a high-visibility mass media campaign
(b) Design a mass media campaign by considering events that transmit well over the radio, such as song concerts and soap operas
(c) Conduct annual focus group discussions to help identify and prioritize the most influential and impactful messaging to use in the campaign (initial focus groups will be held right after start-up so that the messaging is available to all campaign events, including CHAs, village health days and mass media)
    a. Coordinate and plan messaging with the Health Education Unit and the MOHSW vertical programs
(d) Implementation of a high-visibility mass media campaign

4. WORKPLAN & BUDGET

4.1 High-level workplan

Key Interventions	Year 1				Year 2				Year 3				Year 4			
	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
Expand TFDA Registration fast-tracked priority products list and register key EMLc Drugs																
Updated TFDA Priority product list presented and disseminated	X															
Registration granted for dispersible amoxicillin & pre-packaged ORS/zinc		X	X													
Initial stocks of dispersible amoxicillin & pre-packaged ORS/zinc are available in-country				X												
Roll-out of diarrheal treatment corners and launch of pre-packaged ORS/zinc through the public and private sector																
Diarrheal Treatment Corners	X															
Assessment and documentation of current diarrheal corner situation	X	X														
Introduction of diarrheal treatment corners in the four remaining regions			X	X	X	X										
Additional printing and dissemination of wall charts			X	X	X	X										
Dissemination of additional types of job aides			X	X	X	X										
ORS/zinc pre-packaging																
consumer/market research	X	X														

Identify viable business plans and establish MOUs with firms		X														
Prime the market with an initial procurement				X												
Pre-packaged ORS/zinc available in public health facilities					X	X	X	X	X	X	X	X	X	X	X	X
Social marketing of pre-packaged ORS/zinc					X	X	X	X	X	X	X	X	X	X	X	X
Evaluate consumer uptake (baseline and evaluation)				X							X					
Adaptation and scale-up of proven mHealth monitoring systems (ILS Gateway & *SMS for Life*)																
SMS for Life																
Establish the necessary partnerships and MOUs to revise the *SMS for Life* SMS data tool		X														
Design a *SMS for Life* ADDO pilot test					X											
Conduct pilot					X	X	X	X								
Roll-out the *SMS for Life* model to as many ADDOs as interested								X	X	X	X	X	X	X	X	X
ILS Gateway and Interface																
Technological design of an interface between the *SMS for Life* and ILS Gateway systems		X	X	X												
Support phased roll-out of training of districts in ILS Gateway and Interface use and management							X	X	X	X						
Establishment of an ILS Gateway management and supervision system							X	X	X	X						
Regular mentoring in and supervision of ILS Gateway use									X	X	X	X	X	X	X	X

Integration of ILS Gateway indicators into the motivation/incentives system developed in Intervention 5 below									X	X	X	X	X	X	X	X
ADDO network access strengthening (TFDA list, CHF integration)																
Situation analysis of current CHF management and fund use status at the district level	X	X														
Workshop to revise the approved drug list for ADDOs			X													
Design of a revised CHF scheme that includes ADDOs				X	X	X	X									
Signature of service agreements between ADDOs and the CHF								X	X	X						
Linked roll-out of the integrated CHF product and the promotional campaign								X	X	X	X	X	X	X	X	X
Roll-out of ICATT IMCI training and alignment with a motivation/incentive system to activate linkages																
ICATT																
Documentation of ICATT situation, coupled with research to assess introduction of adapted ICATT in-service training compared to a dIMCI Mentorship Program, and to assess the introduction of ICATT into ADDOs and private facilities		X	X													
Technical work to update the ICATT tools					X	X	X									
Final roll-out to remaining one-third of public sector facilities								X	X	X	X	X				
Refresher training to all public health facilities already trained									X	X	X	X	X	X	X	
Training to regional training facilities & pre-service training facilities							X	X								
Adaptation of ICATT for ADDOs (modules and training format), and design of roll-out to ADDOs							X	X								

Roll-out of ICATT to established ADDOs									X	X	X	X	X	X	X	X
Adaptation of ICATT for other private sector facilities and design roll-out to these facilities							X	X								
Roll-out of ICATT to other private facilities									X	X	X	X				
Incentives/Motivation System (such as PBF or Mentorship Program)																
Operational research and field-testing of different PBF approaches, including a Mentorship Program					X	X	X									
Selection of best approach									X							
Establishment of a budget and roll-out plan									X	X						
Mapping of institutional embedding, and identification of mechanisms for fund holding, accountability and transparency, verification efforts, community involvement, mentorship structures, as necessary									X	X	X					
Identification of general MCH indicators for PBF/Mentorship Program verification									X	X	X					
Capacity-building of identified mechanisms in phase one											X	X				
Implementation of contracted activities and performance-based financing in phase one (more traditional PBF)													X	X	X	X
Research to compare the outputs and outcomes in phase one PBF/Mentorship Program areas to control areas																X
Targeted advocacy campaign promoting the Strategy at all levels																
Advocacy meetings with key decision makers				X	X	X	X	X				X			X	
Conduct district launch ceremonies				X	X	X	X	X	X	X	X	X				

Identification of and participation in key stakeholder meetings			X		X		X		X		X		X		X	
Conduct site visits to model ADDOs and districts to highlight and emphasize the strategy impact							X	X	X	X	X	X	X	X	X	X
Targeted BCC campaign to promote rational diarrhea, malaria and pneumonia diagnosis and treatment																
Communication Support to CHAs																
Design of communications training structure for CHAs, including adaptation of existing IPC manuals, tools, procedures, and policies				X	X											
Training to the new CHA structure on communication techniques (IPC and medium media), community mobilization, and key messaging						X	X	X	X	X	X	X	X	X	X	X
CHAs disseminating messaging through interpersonal communication and medium media channels						X	X	X	X	X	X	X	X	X	X	X
Village Health Days																
Work with CHAs to mobilize and organize the communities							X	X	X	X	X	X	X	X	X	X
Hold at least one village health day per district per quarter								X	X	X	X	X	X	X	X	X
High-visibility Mass Media Campaign																
Design mass media campaign (radio)			X	X												
Conduct annual focus group discussions to help identify and prioritize influential and impactful messaging				X			X				X				X	
Implementation of mass media campaign						X	X	X	X	X	X	X	X	X	X	X

4.2 High-level budget, USD

	2012	2013	2014	2015	TOTAL
TOTAL	1,828,673	19,698,206	24,077,838	37,625,988	83,230,704
Administration Support Costs (15%)	238,523	2,569,331	3,140,588	4,907,738	10,856,179
TOTAL before administration support costs	1,590,150	17,128,875	20,937,250	32,718,250	72,374,525
Intervention 1: Expand TFDA Registration Fast-tracked Priority Products List and Register key EMLc Drugs	27,300	5,250	-	-	32,550
Intervention 2: Roll-out of diarrheal treatment corners and launch of prepackaged ORS/Zinc through the public and private sectors	586,425	8,169,000	7,901,250	7,875,000	24,531,675
Intervention 3: Adaptation and scale-up of proven mHealth monitoring systems (ILS Gateway & SMS for Life)	85,050	2,493,750	1,632,750	682,500	4,894,050
SMS for Life	56,000	295,000	305,000	450,000	1,106,000
ILS Gateway and Interface	25,000	2,080,000	1,250,000	200,000	3,555,000
Intervention 4: ADDO Network access strengthening (TFDA list, CHF integration)	89,250	525,000	1,055,250	1,050,000	2,719,500
Intervention 5: Roll-out of ICATT IMCI training and alignment with a motivation/incentive system to activate linkages (public and private)	36,750	1,779,750	6,531,000	19,078,500	27,426,000
ICATT	35,000	1,475,000	6,140,000	6,020,000	13,670,000
Incentives/Motivation System (such as PBF)	-	220,000	80,000	12,150,000	12,450,000
Intervention 6: Targeted advocacy campaign promoting the Strategy at all levels	456,750	241,500	199,500	105,000	1,002,750
Intervention 7: Comprehensive BCC campaign to promote rational diarrhea, malaria and pneumonia diagnosis and treatment	233,625	3,824,625	3,517,500	3,827,250	11,403,000
Communication support to CHAs	27,500	312,500	550,000	550,000	1,440,000
Village Health Day	70,000	310,000	780,000	1,075,000	2,235,000
High-visibility mass media campaign	125,000	3,020,000	2,020,000	2,020,000	7,185,000
Cross-cutting: Monitoring and Evaluation	75,000	90,000	100,000	100,000	365,000

	2012	2013	2014	2015	TOTAL
Commodities	8,696,596	24,695,106	45,188,711	46,262,635	124,843,047
ACT	-	8,069,171	16,138,343	16,138,343	40,345,856
RDT	160,000	6,843,968	14,813,228	14,813,228	36,630,424
Zinc	3,163,302	3,785,583	6,413,735	7,079,777	20,442,397
ORS	1,969,155	2,356,525	3,992,550	4,407,161	12,725,392
Amoxycillin	3,329,138	3,639,858	3,730,855	3,824,126	14,523,977
Breathing counters	75,000	-	100,000	-	175,000
Procurement support costs (5%)	434,830	1,234,755	2,259,436	2,313,132	6,242,152
TOTAL Commodities with Support Costs	9,131,426	25,929,862	47,448,146	48,575,766	131,085,200

5. IMPLEMENTATION ARRANGEMENTS

5.1 Monitoring & evaluation

Monitoring and evaluation will be participatory in nature, and will include key stakeholders across the health system in the collection, analysis and utilization of data. The comprehensive monitoring and evaluation structure will 1) plot progress in meeting workplan deliverables and milestones, 2) measure the quality of intervention implementation and outputs, and 3) track progress against the achievement of stated objectives and outcomes. Performance monitoring data will be collected through monitoring reports, MOH reporting and statistics through the HMIS and other means, healthcare service provider reporting and statistics, evaluations, and other appropriate means.

To reduce the cost normally associated with the collection and analysis of changes in knowledge, attitudes and practices, Lot Quality Assurance Sampling (LQAS) will be used where appropriate. Countries like DRC have already documented positive experience integrating LQAS into the regular supervision and management capacity of their Health Zone structure for collection at the community level [31] and Tanzania has been testing and piloting cHMIS solutions more recently. Given the Interventions outlined above focused on mHealth and electronic Logistics Management Information Systems (eLMIS), such as ILS Gateway and *SMS for Life*, and given the work with ICATT IMCI, the idea is to see if any of these tools can be aligned with LQAS and the HMIS review and monitoring system to further simplify the LQAS approach and HMIS data collection. At a minimum, LQAS indicators can be collected during regular routine supervision and integrated into the HMIS. Outcome indicator analysis will rely mostly on the TDHS, using 2010 as the baseline and 2015 as the evaluation.

Data analysis and evidence-based decision-making will take place at each level of the health structure, from the CHMT and district level, up through the Regional and Central level. Performance review meetings will be used to disseminate data analysis findings, gather service provider and implementer feedback and discuss recommendations. Meeting outcomes and recommendations will be grouped into reports sent to the next health structure level where they will be further compiled until one final report reaches the Chief Medical Officer. Those responsible for compiling certain level reports will also be responsible for ensuring dissemination of implementation change or modification decisions back down through the system.

Given that there are ten EMI countries globally, the documentation and dissemination of best practices and lessons learned among the countries will boost effective and efficient responses to common challenges faced. The strategy proposes an annual international lessons learned meeting in a different EMI country each time to share experiences, discuss challenges, and recommend international solutions.

5.2 Risk assessment

The strategy developed in this document is meant to contribute to universal coverage in ORS/zinc, ACTs and dispersible amoxicillin, but it not a global strategy, such as the *Primary Health Services Development Programme – MMAM* or *National Health Policy*. The Strategy will contribute to reaching the *National Health Policy*, the *National Strategy for Growth, and Reduction of Poverty II*, the MMAM and the One Plan objectives, and it will contribute to universal coverage in ORS/zinc, ACTs and dispersible amoxicillin/cotrimoxazole, but the expectation is that the MOHSW and other technical and financial partners, as well as the private sector, will continue to work toward filling remaining gaps and weaknesses in the health system that are not covered by this Strategy but that have an impact on the goal of universal coverage. The Strategy, therefore, makes certain assumptions regarding risks and the current situation. This section reviews the main assumptions required for the success of the Strategy, as well as an assessment of potential risks and potential responses to those risks.

Main Assumptions:

- Stability in Tanzania
- GoT prioritizes budgeting for comprehensive IMCI and the EMLc, overcoming the HRH crisis and rolling-out the new CHAs, responding to HMIS challenges, ensuring minimum

stock levels at the MSD, and continued increased financial allocations to the health sector toward the goal of 15% of the annual budget

- GoT assumes and ensures Strategy leadership, coordination and sustainability, as well as coordination with the different financial and technical partners
- Financial partners are ready to support the GoT in its endeavor to fulfill the Strategy objectives
- GoT takes responsibility for ensuring good governance and transparency in its practices

Key Risks :

- Cross-disease risks
  - The Strategy is not a stand-alone strategy that can alone ensure the system strengthening and overcome all the bottlenecks necessary to ensure universal coverage
    - Response: Tanzania already has global health strategies, such as the MMAM and *National Health Policy* that outline a complete approach to system strengthening. This Strategy is meant to complement these larger strategies with cost-effective approaches between now and 2015. In addition to implementing the Strategy outlined here, a focus on financing and completely implementing the global strategies is necessary to achieve universal coverage.
  - HRH crisis
    - Response: While the Strategy does not specifically respond with an Intervention focused on increasing human resources, it includes specific Interventions that promote current MOHSW and partner initiatives to respond to the HRH crisis, such as Intervention 7 and support to the CHAs, and Intervention 4 to strengthen the ADDO network.
  - The BCC aspects at the community-level depend on MOHSW roll-out of CHAs. If the CHA roll-out is not done in a timely manner, it will impact the Strategy's ability to launch a comprehensive BCC campaign
    - Response: The MOHSW led the Strategy development and underlined the importance of the CHA approach. The MOHSW is fully committed to rolling-out the CHAs and the EMI Strategy. Given the MOHSW's leadership over both initiatives, collaboration for efficiency and effectiveness will be facilitated.
  - The Strategy includes minimum direct intervention at the community level, given MOHSW's CHA intervention
    - Response: The Strategy complements the MOHSW's focus on the CHAs by focusing on ADDOs and their link to communities as a proven and effective support to the public sector in reaching universal coverage. It is expected that coupling the CHA and ADDO approach will help to cover the needs of communities. Collaboration and linkages with the CHAs are built into the Strategy to promote a link between the strategy and the direct community.
  - Increase in poor quality / counterfeit drugs. The Strategy focus is on responding to stock-outs and supply chain management challenges, and not as much on drug quality.
    - Response: TFDA involvement is integrated throughout the Strategy and so the TFDA will benefit from its involvement in capacity building efforts.
    - Response: The Strategy supports linkages and coordination with other financial and technical partners focusing on drug quality and registration/monitoring procedures
  - Stock-outs at the central level (MSD)
    - Response: Negotiations between the GoT and financial partners will be necessary to determine the most sustainable procurement support. Initial support may be provided to spark availability in the country with GoT procurement take-over thereafter. The GoT and financial partners will discuss need and come-up with the most viable procurement plan.
  - CHF current low enrollment and implementation challenges threaten the success of ADDO integration into the CHF

        - Response: A situation analysis is proposed as the first part of the CHF integration under Intervention 4. The findings will be disseminated to discuss recommended solutions to challenges. One of the previous identified challenges was the limited benefits coverage. The addition of ADDOs to the CHF will help to respond to this challenge and will give reason to newly promote the product. The extended benefits coverage and additional promotion is meant to boost enrollment.
    - High cost of drugs and non-sustainability of subsidization
        - Response: Boosting enrolment in the CHF is meant to help lower the cost of health care and drugs for vulnerable populations. Tanzania's promotion of local production of drugs is another cost-cutting initiative that this Strategy will promote both in terms of the production of pre-packaged ORS/zinc to be introduced into the country and potentially dispersible amoxicillin. The Strategy will also collaborate with other cost-cutting efforts.
    - Low uptake of interventions in remote areas, poor communities, vulnerable populations, especially in terms of uptake of rational treatment and changes in caregiver preference to align with guidelines
        - Response: Intervention 7 is meant to target the important issues surrounding rational prescription and treatment, and compliance with treatment guidelines. The intervention is meant to respond to both caregiver and service provider challenges. Integrating the CHAs into the Strategy in Intervention 7 is meant to create a direct link with communities to ensure message dissemination to even the most remote communities.
    - Slow implementation of interventions
        - Response: Considerable time and effort has been put into ensuring GoT buy-in from the start, and GoT ownership over the Strategy design. It is expected that the GoT will prioritize the roll-out of the Interventions, once funded, as intended.
    - Creation of parallel eLMIS or HMIS systems
        - Response: Intervention 3 specifically aims to not only support the adaptation and scale-up of ILS Gateway and *SMS for Life*, but to ensure an interface that links both of them into the GoT ILS system. Intervention 5 builds on the ICATT IMCI training model already integrated into the GoT system. These technological systems are meant to facilitate upload of data into the central HMIS system, promoting use of that system and not the creation of parallel systems.
    - Caregivers not completing a full-course of treatment once symptoms are gone, in order to save extra medicine for future illness
        - Response: Intervention 7 is meant to target the important issues surrounding rational prescription and treatment, and compliance with treatment guidelines. The intervention is meant to respond to both caregiver and service provider challenges. Integrating the CHAs into the Strategy in Intervention 7 is meant to create a direct link with communities to ensure message dissemination to even the most remote communities.

- Diarrhea
    - Lack of demand for Zinc & ORS
        - Response: Intervention 2 is specifically designed to promote ORS/zinc and rational treatment through diarrheal treatment corners and respond to caregiver preference with a pre-packaged ORS/zinc kit. Intervention 7 will also further support demand creation through BCC.
    - Pre-packaged ORS/zinc may not solve caregiver preference for antibiotics
        - Response: The pre-packaged kit will help to make it easier for caregivers to rationally treat diarrhea, even if they still may prefer antibiotics. Also, the potential inclusion of ORS tetrapak and zinc syrup is meant to respond to the preference for syrups, which are preferred and tend to be thought of as antibiotics. Intervention 7 is meant to target the important issues surrounding rational prescription and treatment, and compliance with treatment guidelines. The intervention is meant to respond to both caregiver and service provider challenges. Integrating the CHAs into the Strategy in

Intervention 7 is meant to create a direct link with communities to ensure message dissemination to even the most remote communities.

- Use of zinc for less than the proposed 10 days
  - Response: Intervention 7 is meant to target the important issues surrounding rational prescription and treatment, and compliance with treatment guidelines. The intervention is meant to respond to both caregiver and service provider challenges. Integrating the CHAs into the Strategy in Intervention 7 is meant to create a direct link with communities to ensure message dissemination to even the most remote communities.

- Malaria:
  - High price levels of ACTs (incl. AMFm ACTs)
    - Response: Boosting enrolment in the CHF is meant to help lower the cost of health care and drugs for vulnerable populations. Tanzania's promotion of local production of drugs is another cost-cutting initiative that this Strategy promotes both in terms of introducing pre-packaged ORS/zinc into the country and potentially dispersible amoxicillin. The Strategy will also collaborate with other cost-cutting efforts, such as those implemented by CHAI, and will advocate on behalf of ensuring at least one local manufacturer/pharmaceutical has WHO GMP status.
  - Lack of focus on strengthening RDT roll-out in the public sector and moving it to ADDOs
    - Response: While there is not a specific intervention focused on RDT roll-out described in the Strategy, Intervention 5 is meant to update and adapt ICATT IMCI training tools. As part of this Intervention, inclusion of RDT training updates are suggested, as is the consideration of including RDT trainings into the ADDO trainings, once GoT approval is secured.
  - Prescription of ACTs in addition to other treatments for a negative RDT instead of replacing ACTs
    - Response: Intervention 7 is meant to target the important issues surrounding rational prescription and treatment, and compliance with treatment guidelines. The intervention is meant to respond to both caregiver and service provider challenges. Integrating the CHAs into the Strategy in Intervention 7 is meant to create a direct link with communities to ensure message dissemination to even the most remote communities.
  - Malaria efforts and success decrease with a comprehensive approach instead of a vertical program approach
    - Response: The intension of a comprehensive approach is not to undermine the progress made on a specific disease, but rather to exponentially improve the overall progress made on that disease and related diseases. The Strategy will work closely with not only the integrated MOHSW departments, but also the vertical programs, to ensure mutually beneficial progress.

- Pneumonia:
  - Slow registration of dispersible amoxicillin and lack of drug availability
    - Response: Intervention 1 is focused on trying to overcome this risk. An aggressive timeline is proposed to try to ensure dispersible amoxicillin in-country by the end of the first year of implementation.
  - Continued preference for crystapen injections
    - Response: Intervention 7 is meant to target the important issues surrounding rational prescription and treatment, and compliance with treatment guidelines. The intervention is meant to respond to both caregiver and service provider challenges. Integrating the CHAs into the Strategy in Intervention 7 is meant to create a direct link with communities to ensure message dissemination to even the most remote communities.
  - Lack of oxygen at referral level
    - Response: The MMAM and National Health Policy are meant to respond to the health system strengthening issue at the heart of this risk. The Strategy is meant to complement the efforts of these global efforts so that the global strategies can focus on issues such as lack of oxygen at referral level.

- Over use of antibiotics leading to drug resistance
  - Response: The strategy is focused on promoting rational prescription and treatment. Intervention 7 is meant to target the important issues surrounding rational prescription and treatment, and compliance with treatment guidelines. The intervention is meant to respond to both caregiver and service provider challenges. Integrating the CHAs into the Strategy in Intervention 7 is meant to create a direct link with communities to ensure message dissemination to even the most remote communities.
- Still not enough focus on pneumonia
  - Response: the introduction of this Stategy is meant to further the focus on IMCI and to respond to specific bottlenecks across diarrhea, malaria and pneumonia. It is expected that a focus on implementing the Strategy will bring more awareness to the challenges faced in terms of pneumonia and will promote the integration of innovative and cost-effective solutions.

6. REFERENCES

Key informant interviews were used as a major source of data collection. A literature review was also conducted. The working group that was formed and led by the MOHSW/RCHS with the support of PSI/Tanzania also served as an important source of information. The working group led by MOHSW/RCHS and coordinated by PSI was composed of other key stakeholders, including UNICEF, WHO, UNFPA, USAID, CHAI, JSI, and MSH. The group provided recommendations, commented upon draft documents and further completed the information provided by the key informant interviews and the literature review. The group met December 6th, January 6th, January 10th, and a mini working group met January 11th. The framework and activities proposed by the working group was presented to the Chief Medical Officer (CMO) on January 13th. The working group and CMO inputs were integrated into the January 15th draft strategy. The information above reflects key findings from the interviews, literature review, and working group. Literature review sources are numbered and cited throughout in [superscript] and the numbers correspond to the numbered list below:

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7. ANNEXES

7.1. Detailed workplan

Key Interventions	Responsible Parties	Year 1				Year 2				Year 3				Year 4			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
Expand TFDA Registration fast-tracked priority products list and register key EMLc Drugs	RCHS and TFDA co-leads																
Stakeholder workshop	RCHS, financial & technical partner	X															
Coordinate with NIMR, MUHAS and WHO to explore alternative pediatric pneumonia first line treatments other than dispersible amoxicillin	RCHS, NIMR, MUHAS, financial & technical partner	X															
Advocacy meetings with the TFDA	RCHS and TFDA, financial & technical partner	X															
TFDA meetings/working groups to revise the priority product list	TFDA	X															
Updated TFDA Priority product list presented and disseminated	TFDA	X															
Jump-start meetings with manufacturers/pharma firms	RCHS, TFDA and Technical partner		X	X	X												
Registration granted for dispersible amoxicillin & pre-packaged ORS/zinc	TFDA		X	X													
Initial stocks of dispersible amoxicillin & pre-packaged ORS/zinc are available in-country	Contracted, manufacturers/Pharma firms, TFDA/PSU/MSD, financial & technical partners				X												
Roll-out of diarrheal treatment corners and launch of pre-packaged	RCHS overall lead (with TFDA, MSD, Newborn																

ORS/zinc through the public and private sector	and Child Health Unit Department, PSU, RHMT/CHMTs)																
Diarrheal Treatment Corners		X															
Assessment and documentation of current diarrheal corner situation	Technical partner in collaboration with RCHS and Newborn and Child Health (NbCH) Unit	X	X														
Workshop with stakeholders, roll-out plan established	RCHS, other MOHSW, financial & technical partners		X														
District advocacy and promotion meetings to introduce idea of diarrheal treatment corners in four new regions	Regional and District Coordinators, RHMT, CHMT			X	X												
Introduction of diarrheal treatment corners in the four remaining regions	RCHS/NbCH Unit, RHMT, CHMT, technical partner			X	X	X	X										
Additional printing and dissemination of wall charts	RCHS/NbCH Unit, technical partner			X	X	X	X										
Design of additional types of job aides, as needed	RCHS/NbCH Unit, technical partner			X	X	X	X										
Printing of additional types of job aides	RCHS/NbCH Unit, technical partner			X	X	X	X										
Dissemination of additional types of job aides	RCHS/NbCH Unit, technical partner			X	X	X	X										
ORS/zinc pre-packaging																	
Planning meetings with MOHSW, plan of action established	RCHS to lead with technical partner support		X														
consumer/market research	technical partner, collaboration with MOHSW	X	X														

Research dissemination meeting	technical partner, collaboration with MOHSW		X														
Meetings with local pharma firms to discuss research	RCHS, PSU, technical partner		X														
Identify viable business plans and establish MOUs with firms	RCHS, PSU, technical partner		X														
Production of initial stock of pre-packaged ORS/zinc	contracted local pharma firm		X	X	X												
Visits to providers to promote the new product	Regional/District Coordinators, technical partners, contracted local pharma			X	X												
Prime the market with an initial procurement	Technical partners, contracted local pharma with MOHSW				X												
Continued production of pre-packaged ORS/zinc	contracted local pharma firm					X	X	X	X	X	X	X	X	X	X	X	X
Pre-packaged ORS/zinc available in public health facilities	Contracted, manufacturers/Pharma firms, TFDA/PSU/MSD, financial & technical partners					X	X	X	X	X	X	X	X	X	X	X	X
Market activations and marketing	Technical partners, contracted local pharma with MOHSW			X	X												
promotion and demand creation campaigns (Intervention 7)	Technical partners, contracted local pharma with RCHS				X	X	X	X	X	X	X	X	X	X	X	X	X
Social marketing of pre-packaged ORS/zinc	Technical partners with MOHSW					X	X	X	X	X	X	X	X	X	X	X	X
Evaluate consumer uptake (baseline and evaluation)	Technical partners with MOHSW				X							X					

Adaptation and scale-up of proven mHealth monitoring systems (ILS Gateway & *SMS for Life*)	RCHS coordinating lead, PSU technical lead the ILS Gateway, technical lead TBD for *SMS for Life* (collaborating with the Chief Medical Officer, MSD, and TFDA, and NbCH Unit)																
SMS for Life																	
Conduct initial coordination workshops	MOHSW technical lead TBD with RCHS and technical partner	X															
Meet with the partners working on the EMLc to determine whether the list is finalized, or whether a portion of it is finalized enough to be included in the *SMS for Life* tool	MOHSW technical lead TBD with RCHS and technical partner	X															
Establish the necessary partnerships and MOUs to revise the *SMS for Life* SMS data tool	MOHSW technical lead TBD with RCHS and technical partner		X														
Identify a cost-effective way to quickly disseminate the additional/updated information	Technical partner with MOHSW technical lead TBD and RCHS			X	X												
Design a *SMS for Life* ADDO pilot test	Technical partner with MOHSW technical lead TBD and RCHS					X											
Identify ADDOs willing to establish a PPP to integrate *SMS for Life*	Technical partner, MOHSW tech lead TBD, RCHS					X											
Conduct pilot	Technical partner with MOHSW technical lead TBD and RCHS					X	X	X	X								
Evaluate and disseminate pilot	MOHSW technical lead								X								

findings to promote approach	TBD with RCHS and technical partner																
Identify ADDOs nationwide willing to uptake *SMS for Life*	Technical partner with MOHSW technical lead TBD and RCHS								X								
Roll-out the *SMS for Life* model to as many ADDOs as interested	Technical partner with MOHSW technical lead TBD and RCHS								X	X	X	X	X	X	X	X	X
Evaluate uptake and determine if integration should be an accreditation obligation	MOHSW technical lead TBD with RCHS and technical partner											X	X				
ILS Gateway and Interface																	
Planning workshop	PSU with RCHS, JSI, financial and technical partners	X															
Technological design of an interface between the *SMS for Life* and ILS Gateway systems	Technical partner with PSU, RCHS, MOHSW technical lead TBD		X	X	X												
Initial training-of-trainers and a core group of system administrators	Technical partner with PSU, RCHS					X	X										
Support phased roll-out of training of districts in ILS Gateway and Interface use and management	Training-of-trainers supported by technical partner, PSU, RCHS							X	X	X	X						
Establishment of an ILS Gateway management and supervision system	Technical partner with PSU, RCHS							X	X	X	X						
Regular mentoring in and supervision of ILS Gateway use	TBD once supervision system is established									X	X	X	X	X	X	X	X
Integration of ILS Gateway indicators into the motivation/incentives system developed in Intervention 5 below	Technical partner with PSU, RCHS									X	X	X	X	X	X	X	X

ADDO network access strengthening (TFDA list, CHF integration)	TFDA																
Situation analysis of current CHF management and fund use status at the district level	Technical partner with TFDA and CHSB	X	X														
ADDO and CHF Situation analysis workshop to discuss with stakeholders	TFDA and RCHS, financial & technical leads		X														
Advocacy meetings with the TFDA to discuss updating the ADDO drug list	RCHS		X														
Workshop to revise the approved drug list for ADDOs	TFDA			X													
Design of a revised CHF scheme that includes ADDOs	Technical partner with TFDA and CHSBs				X	X	X	X									
Advocacy meetings with ADDOs at the district level to promote integration into the CHF	District Coordinator, CHSB, TFDA and technical partner							X	X								
Development of mutually beneficial service agreements between ADDOs and the CHF/CHSB	Technical partner with TFDA and CHSBs							X	X								
Signature of service agreements between ADDOs and the CHF	ADDOs and CHSB								X	X	X						
Design of a promotional campaign to sensitize the population and market the new product	Technical partner with TFDA and CHSBs						X	X									
Linked roll-out of integrated CHF product and promotional campaign	Technical partner with TFDA and CHSBs								X	X	X	X	X	X	X	X	X
Roll-out of ICATT IMCI training and alignment with a motivation/incentive system to activate linkages	RCHS/NbCH unit																
ICATT																	

Documentation of ICATT situation, coupled with research to assess introduction of adapted ICATT in-service training compared to a dIMCI Mentorship Program, and to assess the introduction of ICATT into ADDOs and private facilities	Technical partner with RCHS/NbCH unit		X	X													
Documentation dissemination workshop	RCHS/NbCH unit, other MOHSW representatives, financial & technical partner				X												
Technical work to update the ICATT tools	Technical partner with RCHS/NbCH unit					X	X	X									
Field visits to respond to public sector areas with identified ICATT challenges	District Coordinator, technical partner, RCHS/NbCH Unit					X	X	X	X								
Final roll-out to remaining one-third of public sector facilities	District Coordinator, technical partner, RCHS/NbCH Unit								X	X	X	X	X				
Refresher training to all public health facilities already trained										X	X	X	X	X	X	X	
Training to regional training facilities & pre-service training facilities								X	X								
Evaluation of adapted ICATT IMCI in-service training versus dIMCI and determination of best approach for continued public facility in-service training	RCHS/NbCH unit with technical partner										X	X	X				
Advocacy meetings with ADDOs and other private facilities to promote the integration of ICATT tools into their systems	District, TFDA, RCHS/NbCH, technical partner						X	X									

Adaptation of ICATT for ADDOs (modules and training format), and design of roll-out to ADDOs	technical partner, TFDA, RCHS/NbCH Unit							X	X								
Roll-out of ICATT to established ADDOs	RHMT/CHMT, TFDA, technical partner									X	X	X	X	X	X	X	X
Adaptation of ICATT for other private sector facilities and design roll-out to these facilities	technical partner, TFDA, RCHS/NbCH Unit							X	X								
Roll-out of ICATT to other private facilities	technical partner, TFDA, RCHS/NbCH Unit									X	X	X	X				
Incentives/Motivation System (such as PBF or Mentorship Program)																	
Operational research and field-testing of different PBF approaches, including a Mentorship Program	Technical partner with RCHS/NbCH Unit					X	X	X									
Research findings dissemination and discussion	RCHS/NbCH Unit, financial & technical partners								X								
Selection of best approach	RCHS/NbCH Unit									X							
Communication and promotion of approach to health sector management and providers	RHMT/CHMT, technical partner									X	X	X					
Establishment of a budget and roll-out plan	RCHS/NbCH Unit, financial & technical partners									X	X						
Mapping of institutional embedding, and identification of mechanisms for fund holding, accountability and transparency, verification efforts, community involvement, mentorship structures, as necessary	Technical partner with RCHS/NbCH Unit									X	X	X					

Identification of general MCH indicators for PBF/Mentorship Program verification	Technical partner with RCHS/NbCH Unit									X	X	X					
Capacity-building of identified mechanisms in phase one	Technical partner with RCHS/NbCH Unit, district											X	X				
Negotiation and contracting of the price of indicators and the allocation of incentives with providers in phase one (more traditional PBF)	Providers/Contracted entity, Technical partner with RCHS/NbCH Unit											X	X				
Implementation of contracted activities and performance-based financing in phase one (more traditional PBF)	Providers/Contracted entity													X	X	X	X
Research to compare the outputs and outcomes in phase one PBF/Mentorship Program areas to control areas	Technical partner with RCHS/NbCH Unit																X
Targeted advocacy campaign promoting the Strategy at all levels	CMO and RCHS																
Message and action plan development workshop with key stakeholders and partners	CMO and RCHS, financial & technical partners			X													
Advocacy meetings with key decision makers	CMO, RCHS, technical partner				X	X	X	X	X				X			X	
Establish district launch schedules, and line-up guests of honor, and speeches	Regional Coordinator, RHMT/CHMT, RCHS, technical partner				X												
Conduct district launch ceremonies	District Coordinator, RHMT/CHMT, technical partner				X	X	X	X	X	X	X	X	X				
Identification of and participation in key stakeholder meetings	CMO, RCHS, technical partner			X		X		X		X		X		X		X	

Conduct site visits to model ADDOs and districts to highlight and emphasize the strategy impact	RCHS, technical partner, Regional and District Coordinators							X	X	X	X	X	X	X	X	X	X
Targeted BCC campaign to promote rational diarrhea, malaria and pneumonia diagnosis and treatment	RCHS/Health Education Unit																
Stakeholder workshop	RCHS/Health Education Unit/NbCH Unit with financial & technical partners		X														
Communication Support to CHAs																	
Smaller stakeholder workshop to further discuss IPC, community mobilization and medium media best practices and lessons learned in Tanzania	RCHS/Health Education Unit/NbCH Unit with technical partner			X													
Design of communications training structure for CHAs, including adaptation of existing IPC manuals, tools, procedures, and policies	Technical partner with RCHS/Health Education Unit/NbCH Unit				X	X											
Training to the new CHA structure on communication techniques (IPC and medium media), community mobilization, and key messaging	Technical partner with RCHS/Health Education Unit/NbCH Unit						X	X	X	X	X	X	X	X	X	X	X
CHAs disseminating messaging through interpersonal communication and medium media channels	CHAs with support from RCHS/Health Education Unit/NbCH Unit and technical partner						X	X	X	X	X	X	X	X	X	X	X
Village Health Days																	
Conduct Stakeholder Meetings	RCHS/Health Education Unit, financial & technical partners			X													

Conduct outreach meetings to identify any potential PPPs to help fund village health days	Technical partner with RCHS/Health Education Unit, MOHSW reps working with private sector		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Establish district village health day schedules	District Coordinator and CHMT, RCHS/Health Education Unit, technical partner					X	X										
Work with CHAs to mobilize and organize the communities	CHAs with support from RCHS/Health Education Unit and technical partner							X	X	X	X	X	X	X	X	X	X
Hold at least one village health day per district per quarter	CHA, District Coordinator, CHMT								X	X	X	X	X	X	X	X	X
High-visibility Mass Media Campaign	RCHS/ Health Education Unit																
Identification of popular icons that could act as spokesperson	Regional and District Coordinator, CHAs, RCHS/NbCH Unit/Health Education Unit, technical partner			X	X												
Design mass media campaign (radio)	technical partner with RCHS/Health Education Unit			X	X												
Conduct annual focus group discussions to help identify and prioritize influential and impactful messaging	Technical partner with RCHS/Health Education Unit				X			X				X				X	
Implementation of mass media campaign	Popular icon, RCHS/Health Education Unit, technical partner						X	X	X	X	X	X	X	X	X	X	X

7.2. Detailed budget, USD (without commodities)

	2012	2013	2014	2015	TOTAL
Intervention 1: Expand TFDA Registration Fast-tracked Priority Products List and Register key EMLc Drugs	27,300	5,250	-	-	32,550
Technical assistance for intervention 1 at 5%	1,300	250	-	-	1,550
Stakeholder workshop, led by RCHS, to discuss the TFDA priority product list, EMLc drugs/products to include, and the next steps to take (outcomes: Action plan and timeline identified; Priority EMLc drugs/products to include identified)	10,000	-	-	-	10,000
Coordinate with NIMR, MUHAS and WHO to explore alternative pediatric pneumonia first line treatments other than dispersible amoxicillin	5,000				5,000
Advocacy meetings with the TFDA to promote the importance of revising the priority product list	2,000	-	-	-	2,000
TFDA meetings/working groups to revise the priority product list, following the TFDA process	1,000	-	-	-	1,000
Updated priority product list presented and disseminated	2,000	-	-	-	2,000
Jump-start meetings with international and local manufacturers/pharmaceutical companies to help facilitate production and distribution once registration is granted	5,000	5,000	-	-	10,000
Registration granted for dispersible amoxicillin & pre-packaged ORS/zinc	1,000	-	-	-	1,000
Initial stocks of dispersible amoxicillin & pre-packaged ORS/zinc are available in-country for distribution.	n/a	-	-	-	-
Intervention 2: Roll-out of diarrheal treatment corners and launch of prepackaged ORS/Zinc through the public and private sectors	586,425	8,169,000	7,901,250	7,875,000	24,531,675
Technical assistance for intervention 2 at 5%	27,925	389,000	376,250	375,000	1,168,175
Assessment and documentation of current diarrheal corner situation	10,000				10,000
Workshop with stakeholders in previous diarrheal treatment corner scale-up to determine best roll-out plan for the four remaining regions, and any lessons learned from current situation	5,000				5,000
District advocacy and promotion meetings to introduce idea of diarrheal treatment corners, and the roll-out plan with key service providers and supervisors	56,000				56,000
Introduction of diarrheal treatment corners in the four remaining regions	250,000	250,000			500,000
Additional printing and dissemination of wall charts (at least 2 per health facility per district)	10,000	10,000			20,000
Design, printing and dissemination of additional types of job aides for diarrheal treatment corners, based on lessons learned so far and need	20,000	20,000			40,000
Conduct initial meetings with the MOHSW to discuss the Intervention, define the appropriate MOHSW lead, and define the plan of action. Establish a long-term financial roll-out plan, including GoT budgeting for taking over procurement	5,000				5,000
Conduct consumer/market research to confirm whether or not pre-packaging ORS/zinc will improve consumer uptake, and if so, which pre-packaged form(s) should be marketed	15,000				15,000
Dissemination meeting to share and discuss research findings, including participants from the public sector (central, regional and district levels), the private sector and the community level	10,000				10,000
Meet with local pharmaceutical firms to further discuss findings and develop business plans	50,000				50,000
Identify most viable and agreeable business plans and establish MOUs with firms for production, promotion, evaluation, etc.	5,000				5,000
Production of initial stock of pre-packaged ORS/zinc					-
Visits to public and private sector providers to promote the new product, to be conducted by both GoT, technical partners and private sector partner (as part of MOU)	65,000				65,000
Prime the market and GoT supply system with an initial procurement (especially through public health facilities, including diarrheal treatment corners)	32,500				32,500
Continued production of pre-packaged ORS/zinc					-
Pre-packaged ORS/zinc available in public health facilities		5,000,000	5,000,000	5,000,000	15,000,000
Social marketing costs of pre-packaged therapy to ADDOs (including demand creation and market activations)		2,500,000	2,500,000	2,500,000	7,500,000
Evaluation of consummer uptake (baseline and evaluation)	25,000		25,000		50,000
Intervention 3: Adaptation and scale-up of proven mHealth monitoring systems (ILS Gateway & *SMS for Life*)	85,050	2,493,750	1,632,750	682,500	4,894,050
Technical assistance for intervention 3 at 5%	4,050	118,750	77,750	32,500	233,050
SMS for Life	56,000	295,000	305,000	450,000	1,106,000
Conduct initial coordination workshops with the SMS for Life partners, the MOHSW and other potential key child survival stakeholders to discuss SMS for Life's current roll-out status, technical ideas for integration of additional medicines, and recommended next steps in order to –Establish a long-term financial roll-out plan and –Review the current training curriculum to determine if new information is necessary, prompting refresher trainings	5,000				5,000
Meet with the partners working on the EMLc to determine whether the list is finalized, or whether a portion of it is finalized enough to be included in the SMS for Life tool. At the minimum, ORS/zinc and cotrimoxazole/dispersible amoxicillin should be included in the tool	1,000				1,000
Establish the necessary partnerships and MOUs to revise the SMS for Life SMS data tool	n/a				-
If additional trainings are necessary, or additional information must be disseminated, identify a cost-effective way to quickly disseminate the additional information (through regional/district trainers, through district launch days, through regular supervision visits, etc.)	50,000				50,000
Design a pilot to determine whether or not SMS for Life roll-out to ADDOs is a cost-effective way to combat ADDO stock-out		5,000			5,000
Identify ADDOs willing to establish a public private partnership by which they cover their own costs to be involved in the study as an intervention area (use the SMS for Life public private partnership model to design these partnerships)		5,000			5,000
Conduct an intervention versus control area pilot		150,000			150,000
Evaluate and disseminate pilot findings		10,000			10,000
If successful, use pilot findings to promote and advocate for the mutual benefits to an ADDO, and identify ADDOs nationwide interested in participating in a roll-out at their own cost		5,000			5,000
Roll-out the SMS for Life model to as many ADDOs as interested		120,000	300,000	450,000	870,000
Evaluate uptake and determine if integration should be an obligation for (re)accreditation			5,000		5,000
ILS Gateway and Interface	25,000	2,080,000	1,250,000	200,000	3,555,000
Planning workshop with JSI, relevant MOHSW representatives and financial and technical partners to discuss the status of the ILS Gateway technological development, the long-term financial roll-out plan for ILS Gateway, and implementation steps	5,000	-	-	-	5,000
Technological design of an interface between the SMS for Life and ILS Gateway systems	20,000				20,000
Initial training-of-trainers and a core group of system administrators to build capacity in ILS Gateway and Interface technology, use, management and training (consider using the 8 Zonal training centers to act as the TOTs)		30,000			30,000
Support phased roll-out of training of districts in ILS Gateway and Interface use and management		2,000,000	1,000,000		3,000,000
Establishment of an ILS Gateway management and supervision system		50,000	50,000		100,000
Regular mentoring in and supervision of ILS Gateway use monthly in the first three months, and every three months thereafter			100,000	100,000	200,000
Integration of ILS Gateway indicators into the motivation/incentives system developed in Intervention 5 below			100,000	100,000	200,000

Intervention 4: ADDO Network access strengthening (TFDA list, CHF integration)	89,250	525,000	1,055,250	1,050,000	2,719,500
Technical assistance for intervention 4 at 5%	4,250	25,000	50,250	50,000	129,500
Situation analysis of current CHF management and fund use status at the district level	50,000				50,000
ADDO and CHF situation analysis workshop to discuss with stakeholders: ADDO situation update (ADDO locations, capacity, gaps), and lessons learned, as they relate to ADDO access; CHF management and fund use situation; Areas for action prior to and in-line with integrating ADDOs into the CHF	20,000				20,000
RCHS-led advocacy meetings with the TFDA to discuss updating the ADDO drug list	5,000				5,000
TFDA-led workshop to revise the approved drug list for ADDOs	5,000				5,000
Design of a revised CHF scheme that includes ADDOs - Including revision of existing manuals, logistical tools, management and fund use guidelines, training materials, and long-term financial plan/vision	5,000	55,000			60,000
Advocacy meetings with ADDOs at the district level to promote integration into the CHF		130,000			130,000
Development of mutually beneficial service agreements between ADDOs and the CHF/CHSB		10,000			10,000
Signature of service agreements between ADDOs and the CHF		5,000	5,000		10,000
Design of a promotional campaign to sensitize the population and market the new product		100,000			100,000
Linked roll-out of the integrated CHF product and the promotional campaign		200,000	1,000,000	1,000,000	2,200,000
Intervention 5: Roll-out of ICATT IMCI training and alignment with a motivation/incentive system to activate linkages (public and private)	36,750	1,779,750	6,531,000	19,078,500	27,426,000
Technical assistance for intervention 5 at 5%	1,750	84,750	311,000	908,500	1,306,000
ICATT	35,000	1,475,000	6,140,000	6,020,000	13,670,000
Documentation of the current IMCI and ICATT situation and lessons learned, coupled with research to assess the introduction of adapted ICATT in-service training compared to a dIMCI Mentorship Program, and to assess the introduction of ICATT into ADDOs and private facilities	25,000				25,000
Documentation dissemination workshop with key stakeholders to discuss lessons learned, recommendations, weaknesses and to determine next steps	10,000				10,000
Technical work to update the ICATT tools		25,000			25,000
Field visits to respond to areas with identified ICATT challenges		50,000			50,000
Final roll-out to remaining one-third of public sector facilities		1,000,000	2,400,000		3,400,000
Refresher training to all health facilities already trained in public sector facilities			1,020,000	1,020,000	2,040,000
Training to regional training facilities and pre-service facilities		250,000			250,000
Evaluation of adapted ICATT IMCI in-service training versus dIMCI and determination of best approach for continued public facility in-service training			20,000		20,000
Advocacy meetings with ADDOs and other private sector facilities to promote the integration of ICATT tools into their systems and to discuss their concerns and needed incentives		50,000			50,000
Adaptation of ICATT (modules and training format) for ADDOs, and design of roll-out to ADDOs		50,000			50,000
Roll-out of ICATT to established ADDOs			2,000,000	5,000,000	7,000,000
Adaptation of ICATT for other private sector facilities and design of roll-out to these facilities		50,000			50,000
Roll-out of ICATT to established private facilities			700,000		700,000
Incentives/Motivation System (such as PBF)	-	220,000	80,000	12,150,000	12,450,000
Pilot phase (2013-14/15)	-	220,000	80,000	2,150,000	2,450,000
Operational research and field-testing of different PBF approaches, including a Mentorship Program		200,000			200,000
Engagement with all local and national level health management and providers to discuss and analyze research results		20,000			20,000
Selection of best approach			5,000		5,000
Communication and promotion of approach to health sector management and providers			5,000		5,000
Establishment of a budget and roll-out plan			5,000		5,000
Mapping of institutional embedding, and identification of mechanisms for fund holding, accountability and transparency, verification efforts, community involvement, mentorship structures, as necessary			5,000		5,000
Identification of general Maternal & Child health indicators for PBF/Mentorship Program verification			5,000		5,000
Capacity-building of identified mechanisms in phase one			50,000		50,000
Negotiation and contracting of the price of indicators and the allocation of incentives with providers in phase one (more traditional PBF)			5,000		5,000
Implementation of contracted activities and performance-based financing in phase one (more traditional PBF)				2,000,000	2,000,000
Research to compare the outputs and outcomes in phase one PBF/Mentorhip Program areas to control areas				150,000	150,000
(post) 2015 Scale up	-	-	-	10,000,000	10,000,000
Assuming positive results from pre-2015, scale-up PBF/Mentorship Program to remaining phased areas, following the long-term budget and roll-out plan (note: this item is budget in case implementation is fast enough to occur pre-2015, but it may happen post-2015)				10,000,000	10,000,000
Intervention 6: Targeted advocacy campaign promoting the Strategy at all levels	456,750	241,500	199,500	105,000	1,002,750
Technical assistance for intervention 6 at 5%	21,750	11,500	9,500	5,000	47,750
Message and action plan development workshop with key stakeholders and partners; develop advocacy packs	270,000				270,000
Advocacy meetings with key health decision-makers, including Regional Coordinators,parliamentarians, and CHMT members, to promote the Initiative and its Strategies, integrate any suggestions they have, and ignite a "spark" throughout the health pyramid	60,000	30,000	30,000	30,000	150,000
Establish district launch schedules, and line-up guests of honor, and speeches.Ensure CHMT attendance/involvement.	15,000				15,000
Conduct district launch ceremonies	40,000	130,000	90,000		260,000
Identification of and participation in key high-level stakeholder meetings (such as the annual IMCI malaria conference, the Vitamin A supplementation meetings, CHMT meetings, etc.)	50,000	50,000	50,000	50,000	200,000
Conduct site visits to model ADDOs and district to highlight and emphasize the strategy impact.		20,000	20,000	20,000	60,000

Intervention 7: Comprehensive BCC campaign to promote rational diarrhea, malaria and pneumonia diagnosis and treatment	233,625	3,824,625	3,517,500	3,827,250	11,403,000
Technical assistance for intervention 7 at 5%	11,125	182,125	167,500	182,250	543,000
Communication support to CHAs	27,500	312,500	550,000	550,000	1,440,000
Stakeholder workshop to discuss past BCC campaign best practices and lessons learned and to establish a long-term financial roll-out plan, including integration into GoT systems and budgets	10,000				10,000
Smaller stakeholder workshop to further discuss IPC, community mobilization and medium media best practices and lessons learned in Tanzania	5,000				5,000
Design of communications training structure for CHAs, including adaptation of existing IPC manuals, tools, procedures, and policies	12,500	12,500			25,000
Training to the new CHA structure on communication techniques (IPC and medium media), community mobilization, and key messaging		50,000	50,000	50,000	150,000
CHAs disseminating messaging through interpersonal communication and medium media channels		250,000	500,000	500,000	1,250,000
Village Health Day	70,000	310,000	780,000	1,075,000	2,235,000
Conduct a stakeholder meeting to discuss village health day lessons learned from the past, and recommendations for the revival	20,000				20,000
Conduct outreach and advocacy meetings with potential private sector partners at the district level to identify any potential Public-Private partnerships possible in helping to fund village health days	50,000	50,000	25,000	20,000	145,000
Establish district village health day schedules, and line-up high-level visitors, guests of honor and speeches		5,000	5,000	5,000	15,000
Work with CHAs to mobilize and organize the communities to prepare songs, dances, presentations, sports events, and other village health day activities		15,000	30,000	10,000	55,000
Hold at least one village health day per district per quarter		240,000	720,000	1,040,000	2,000,000
High-visibility mass media campaign	125,000	3,020,000	2,020,000	2,020,000	7,185,000
Identification of popular celebrities, sports stars, officials or other pop culture icons that could act as spokesperson for a high-visibility mass media campaign	5,000				5,000
Design mass media campaign by considering events that transmit well over the radio, such as song concerts and soap operas	100,000				100,000
Conduct focus group discussions to help identify the most influential and impactful messaging to use in the campaign (focus groups will be held right after start-up so that the messaging is available to all campaign events, including CHAs, village health days and mass media)	20,000	20,000	20,000	20,000	80,000
Implementation of a high-visibility mass media campaign		3,000,000	2,000,000	2,000,000	7,000,000
Cross-cutting: M&E	75,000	90,000	100,000	100,000	365,000
Design and implementation of annual LQAS monitoring for key EMI strategy indicators (including coordination, training and technical support)	75,000	75,000	75,000	75,000	300,000
International dissemination visit to other EMI countries to participate in lessons learned workshops		15,000	15,000	15,000	45,000
Coordination and support for the 2015 DHS to ensure key EMI indicators are integrated			10,000	10,000	20,000

	2012	2013	2014	2015	TOTAL
TOTAL before administrative support costs	1,590,150	17,128,875	20,937,250	32,718,250	72,374,525
Administrative Support costs (15%)	238,523	2,569,331	3,140,588	4,907,738	10,856,179
TOTAL	1,828,673	19,698,206	24,077,838	37,625,988	83,230,704

7.3 M&E Framework

Goal and Objectives	Outcome Indicators»	Output Indicators	Data Source	Method of Data Collection
General Goal: Reduce Child Mortality to 54/1000 births by 2015				
Program Goal – Universal coverage of ORS/zinc for diarrhea, ACTs for malaria, and dispersible amoxicillin for pneumonia				
Objective 1: Improve availability and accessibility of essential medicines and commodities for paediatric care at the facility and community level through the public and private sectors by strengthening existing supply chain management systems (Interventions 1-4)	Increase in Market Penetration (% of outlets nationwide with the drug): • Increase from 82%[13] to 95% for ORS • Increase from 56%[13] to 80% for zinc • Increase from 0% to 80% for dispersible amoxicillin • Increase from 66%[13] to 80% for cotrimoxazole (in interim waiting for dispersible amoxicillin) • Increase from x% to y% for ACTs (use ACTWatch Report when available) Increase % of CHF membership to the 23% peak reached in 1999 [17]	Reduction in the % of health facilities and dispensaries reporting stock outs of ACTs, ORS/zinc and dispersible amoxicillin in the last month / In the last six months (% TBD in initial workshops) Reduction in the % of ADDOs reporting stock-outs of ACTs, ORS, zinc and dispersible amoxicillin in the last month / In the last six months (% TBD in initial workshops) 70% of public health facilities effectively using ILS gateway to monitor ORS/zinc, ACT, and dispersible amoxicillin/cotrimoxazole stocks 70% of accredited ADDOs nationwide effectively using *SMS for Life* to monitor approved ADDO drug stocks Interface established between the ILS Gateway and *SMS for Life* Increase in public facilities with functioning diarrheal treatment corners from x% to y% (%s TBD based on initial situation assessment) Dispersible amoxicillin and OTC diarrhea treatment added to the GoT Priority Products List and the EMLc At least 4 brands of dispersible amoxicillin and one brand of pre-packaged ORS/zinc registered with TFDA TFDA ADDO drug list updated to include appropriate EMLc drugs (i.e. dispersible amoxicillin) ADDOs integrated into CHF membership benefit coverage package	GoT health facility HMIS and regular reports ILS monthly reports *SMS for Life* monthly reports Priority Products List TFDA approved and registered drug list TFDA approved ADDO drug distribution list District/Cousel Health Service Board CHF Reports Measuring Access – in Selected Outlets (MAP) study Strategy update reports	* Reviews * Document analysis * Interviews

Objective 2: Improve ability of health care providers to provide quality pediatric care services and promote rational use of pediatric diarrhea, malaria and pneumonia essential medicines by building health care provider capacity across the different sectors (Intervention 5)	Increase from 22%[5] to 80% of children under the age of 5 who had symptoms of ARI/pneumonia in the preceding 2 weeks who were given the appropriate treatment in accordance with national guidelines Increase from 44% [1] to 80% of children under the age of 5 who had diarrhea in the preceding 2 weeks who were given ORS packets or ORS+zinc. Increase from 25.9%[1] to 80% of children under the age of 5 with fever who received ACTs within 24 hours of the onset of symptoms. Increase from 14%[12] to 80% (WHO recommendation) of public sector health care providers with up-to-date training in IMCI 80% of targeted service providers correctly explain rational diagnosis of diarrhea, malaria and pneumonia according to national IMCI guidelines 80% of targeted service providers correctly explain prevention methods and rational treatment of diarrhea, malaria and pneumonia according to national IMCI guidelines	Roll-out of ICATT to remaining one-third of public sector facilities Adaptation of ICATT for and roll-out to ADDOs and private sector facilities % of health workers trained using ICATT IMCI tools versus traditional IMCI tools (% TBD in initial workshops) Number of IMCI trained service providers receiving semi-annual supervision/testing of IMCI knowledge either through ICATT of routine supervision channels Selection and phase one roll-out of a motivation/incentives system 70% of service providers receiving an up-to-date IMCI training correctly conducted their mentoring/supervision responsibilities per priority guidelines (IMCI or PBF/Mentorship Program) in the previous semester 70% of service providers receiving an up-to-date IMCI training correctly referred the necessary cases per national IMCI guidelines in the previous semester	DHS (2010, 2015) RCHS, IMCI Department reports GoT health facility HMIS and regular reports ICATT monthly reports MOHSW region and district supervision and training reports Strategy update reports Service providers MOHSW personnel ADDO/private facility personnel	*Household Survey/evaluation * Reviews * Document analysis * Interviews * LQAS

Objective 3: Increase informed demand for child health services by implementing comprehensive and integrated communication strategies promoting child health services, products, and behavior change (Interventions 6-7)	Increase from 22%[5] to 80% of children under the age of 5 who had symptoms of ARI in the preceding 2 weeks who were given the appropriate treatment in accordance with national guidelines Increase from 44% [1] to 80% of children under the age of 5 who had diarrhea in the preceding 2 weeks who were given ORS packets or ORS+zinc. Increase from 25.9%[1] to 80% of children under the age of 5 with fever who received ACTs within 24 hours of the onset of symptoms. Increase from 71%[1] to 85% of children under the age of 5 who had symptoms of ARI in the last 2 weeks who were taken to a health care facility. Increase from 52.6%[1] to 80% of children under the age of 5 with diarrhea for whom advice or treatment was sought from a health facility or provider (including ADDOs) Increase from 64%[1] to 85% of children under the age of 5 with fever in the last 2 weeks for whom advice or treatment was sought from a health facility or provider Increased earmarks for IMCI and strategy activities in CHMT budgets	Formal policy outlining the restructured CORPS At least one village health day per district per quarter Implementation of a high-visibility mass media campaign Increase in the % of mothers/caregivers of children under 5 who can correctly identify at least one danger sign that requires timely care-seeking for each of the three childhood illnesses (malaria, pneumonia and diarrhea) (% TBD in initial LQAS) Increase in the % of mothers/caregivers of children under 5 who cite dispersible amoxicillin or cotrimoxazole as the preferred treatment for pneumonia (versus decrease in the % of mothers/caregivers of children under 5 who cite Crystapen injections a the preferred treatment for pneumonia) (% TBD in initial LQAS) Increase in the % of mothers/caregivers of children under 5 who cite ORS/zinc as the preferred treatment for simple diarrhea (non-bloody) (versus decrease in the % of mothers/caregivers of children under 5 who cite Metronidazoles as preferred treatment for simple diarrhea (non-bloody) (% TBD in initial LQAS) Increase in the % of mothers/caregivers of children under 5 who cite ACTs within 24 hours as the preferred treatment for simple malaria (versus decrease in % of mothers/caregivers of children under 5 who cite another antimalarial and/or ACTs without a time frame as the preferred treatment for simple malaria) (% TBD in initial LQAS) Number of caregivers reached with IEC about malaria, pneumonia, and diarrhea Number of key decision-makers reached with targeted advocacy sessions	DHS (2010, 2015) GoT health facility HMIS and regular reports Strategy/Project reports Policy documents RCHS, IMCI Department reports Meeting Minutes Mothers/caregivers Service providers MOHSW personnel ADDO personnel	*Household Survey/evaluation * Reviews * Document analysis * Interviews * LQAS

7.4 Results Framework