



# Report of the Tanzania Assessment of Community Services for Childhood Illness

Final December 12, 2012



## **Table of Contents**

<b>ACKNOWLEDGEMENTS</b>	<b>4</b>
<b>LIST OF ACRONYMS</b>	<b>5</b>
<b>EXECUTIVE SUMMARY</b>	<b>6</b>
<b>BACKGROUND</b>	<b>13</b>
IMCI training and implementation	13
Community health resources in the public sector - Dispensaries	13
Community health resources in the private sector - ADDOs	14
<b>OBJECTIVES OF THE ASSESSMENT</b>	<b>15</b>
General Question I	16
General Question II	16
<b>METHODOLOGY</b>	<b>16</b>
Overview	16
Sample Size and Sampling Strategy/Design	17
Survey Instruments and Data Collection	19
Data Analysis	20
Study Limitations	20
<b>RESULTS</b>	<b>22</b>
Access, Acceptability, and Barriers to Seeking Care	22
Health Worker Performance and Quality of Care	26
Rational Use of Drugs	30
Counseling Caregivers	31
	2

<b>Health Facility Support</b>	<b>32</b>
<b>SUMMARY AND DISCUSSION OF FINDINGS</b>	<b>40</b>
Access to services	40
Quality of Care	41
<b>CONCLUSIONS</b>	<b>42</b>
<b>RECOMMENDATIONS</b>	<b>43</b>
Annex I: Summary of Indicators	47
Annex II: TFDA List of Drugs at ADDOs	48

## Acknowledgements

This assessment was made possible by the financial support from the United States Agency for International Development Tanzania, and by technical support from the Maternal and Child Health Integrated Program under the terms of the Leader with Associates Cooperative Agreement GHS-A-00-08-00002-000; the Strengthening Health Outcomes through Private Sector project under Abt Associates Inc. Cooperative Agreement number: GPO-A-00-09-00007; Population Services International Tanzania; and the University of Dar es Salaam who did the data collection and analysis. The contents are the responsibility of the authors and do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

The authors of this report would like to recognize the Tanzania Ministry of Health and Social Welfare and the Tanzania Food and Drug Authority for their commitment to addressing Tanzania's response to childhood illnesses. We also thank many individuals who provided information about existing programs including Raz Stevenson, USAID/Tanzania, Maternal and Child Health Office; Dr. Suleiman Kimatta (Management Sciences for Health) and regional and district medical officers and their staff from the Ministry of Health and Social Welfare in Kagera, Mtwara, and Kigoma.

## List of Acronyms

ACT	Artemisinin-Combination Therapy
ADDO	Accredited Drug Dispensing Outlet
ALU	Artemether Lumefantrine
CHW	Community Health Worker
DHO	District Health Officer
DLDB	Duka la Dawa Baridi
DTC	Diarrhea Treatment Corners
FGD	Focus Group Discussions
FIFO	First In, First Out
GDS	General Danger Signs
GoT	Government of Tanzania
ICATT	IMCI Computerized Adaptation and Training Tool
IDI	In-depth Interviews
IMCI	Integrated Management of Childhood Illnesses
ITN	Insecticide Treated Nets
MCHIP	Maternal and Child Health Integrated Program
MMAM	Mpangowa Maendeleowa Afya ya Msingi (Primary Health Services Development Program)
MoHSW	Ministry of Health and Social Welfare
MRDT	Rapid Diagnostic Test for Malaria
ORS	Oral Rehydration Salts
PSI	Population Services International
RHC	Road to Health Chart\
SHOPS	Strengthening Health Outcomes through the Private Sector Project
TDHS	Tanzania Demographic and Health Survey
TFDA	Tanzania Food and Drugs Authority
TSPA	Tanzania Service Provision Assessment
URI	Upper Respiratory Infection
USAID	United States Agency for International Development
VHW	Village Health Workers
WHO	World Health Organization

## Executive Summary

In response to a multi-partner regional meeting on the Global Action Plan for the Prevention of Pneumonia and Community Case Management (GAPP/CCM) held in Nairobi on January 2011, the U.S. Agency for International Development (USAID/Tanzania) recognized the need to assess the availability and quality of current primary level child health services particularly in rural regions of Tanzania and determine if those resources currently in place were adequate to ensure access to timely, quality case management of childhood illness. As a result, in consultation with the Ministry of Health and Social Welfare (MoHSW) and the World Health Organization (WHO), USAID/Tanzania invited the Maternal and Child Health Integrated Program (MCHIP) and the Strengthening Health Outcomes through the Private Sector (SHOPS) project to Tanzania to work with local partner Population Services International (PSI) to conduct an assessment of the availability and quality of pediatric care provided by the current network of public sector dispensaries and private sector Accredited Drug Dispensing Outlets (ADDOs). The specific objective was to identify current gaps in level of access to and quality of case management services for childhood illness and provide a context for further discussion among relevant stakeholders to identify next steps required to further strengthen the rural health delivery system. The team also sought to ascertain community perceptions with respect to access to these services and the quality of care provided by these rural health resources. This report presents findings of the assessment of the effectiveness of the current network of dispensaries and ADDOs in Kagera, Kigoma, and Mtwara regions of Tanzania as first points of contact for sick children, particularly in rural areas. These areas were neither selected nor expected to be a nationally representative sample but were purposefully selected as outlined below.

### Methods

The assessment was initiated in June 2011 with introductory field visits to dispensaries, ADDOs, and relevant Government of Tanzania (GoT) and non-governmental stakeholders. The team purposefully selected three rural regions (Kagera, Kigoma, and Mtwara) with the concurrence of USAID/Tanzania. These regions had some of the poorest child health indicators and varying phases of ADDO program development (mature, new and none—or duka la dawa baridi (DLDB)<sup>1</sup> only). Survey data from the three regions were collected in January 2012 through primary and secondary sources. The team collected quantitative and qualitative primary data on access, quality, and community perception of services for childhood illness and conducted a secondary analysis of 2005 and 2010 Tanzania Demographic and Health Survey (TDHS) data. The team returned in February 2012 for additional stakeholder visits.

Two major surveys were conducted:

- 1) A Health Facility Survey composed of four parts: Observation, Exit Interview, Re-examination, and Equipment and Supply Checklist was conducted at randomly selected health facilities and ADDOs in the three target regions. The target population for the observation portion of the facility survey was caregivers of sick children aged 2-59 months with symptoms of or who were sick with diarrhea, fever, cough, or difficulty in breathing. A total of 96 MoHSW dispensaries were visited and 273 case management observations and exit interviews with caregivers were conducted during the survey in the three regions. Fifty eight ADDOs and duka la dawa baridi (DLDB) were surveyed and 25 case observations were conducted. The following findings are based upon 41 service quality, supervision,

---

<sup>1</sup> Duka la dawa baridi are local drug shops, owned by private entrepreneurs, that are authorized to sell over-the-counter drug products. The ADDO program provides 30 days of training for DLDB staff and owners, transforming them into higher level drug shops which are authorized to sell a specific list of prescription drugs. They are regulated by the Tanzania Food and Drug Authority (TFDA). Once all DLDB in an area have had the opportunity to undertake the ADDO training, all other drug shops in the region are to be closed—resulting in a higher overall quality of drug dispensing throughout the country.

and drug availability indicators, which were calculated through descriptive analysis (see Annex I for the summary list of indicators).

- 2) Household-level survey questionnaires (IDIs) were administered to over 1,500 caregivers of children under five, randomly selected from lists provided by dispensaries in each target district. In-depth interviews were conducted with 10 caregivers and photo narratives were gathered from six additional caregivers.

In addition, focus group discussions (FGD) with nine Community Health Boards (one per district) were conducted to assess their current oversight of health resources in the community and their general views on access to and the quality of health services rendered in their districts. Transcripts of the individual interviews with caregivers, narratives, photo narratives, and FGDs were reviewed for major themes and information. These interviews and discussions contributed to the overall analysis of findings.

## Results

### *Access, acceptability, and barriers to seeking care*

Within the MoHSW model of the health system, dispensaries and ADDOs are the frontline sources of care and drugs for treatment of common childhood illness. Dispensaries are the first choice for child care mentioned by the vast majority of caregivers. However, given that dispensaries are frequently out of stock of essential drugs, the ADDO and DLDB serve as an essential “backup” source of medicines when they are not available at the dispensary. Most ADDOs are located in urban or peri-urban areas and not necessarily in rural areas underserved by dispensaries as initially intended by planners.

Convenience of hours of operation for both dispensaries and ADDOs was not identified as a big concern. Respondents identified timeliness of receiving care after reaching the facility as an issue in access to care; they had low perceived quality of care due to high patient-to-healthcare worker ratio and staff taking ‘insufficient time’ to evaluate children. These factors were mentioned more frequently in both IDIs and FGDs in Kigoma region. Otherwise, health workers are considered helpful and are only occasionally seen responding inappropriately to clients. ADDO dispensers were reported to also be friendly and helpful.

The major barriers cited to seeking care are distance and having sufficient financial resources to pay for treatments. While this study did not quantify the proportion of the population living beyond 5 and 10 kilometers from a dispensary or ADDO, both TDHS 2005 and 2010 report distance to services as a major problem for at least a quarter of respondents<sup>2</sup>. There was a difference of opinion among respondents as to whether distance to the dispensary was an issue. IDI respondents did not state that distance was an issue, however, during FGDs, participants suggested that those who live furthest from dispensaries have the hardest time using services. While they may be willing to walk the long distances to dispensaries to obtain free diagnosis, lack of free drugs at dispensaries to treat the child is discouraging as they then have to find cash to pay for drugs at the drug shop. The policy to remove user fees on services for under-five children has increased access. However, the irregular availability of drugs at dispensaries and the need to fall back on the ADDO have created a major barrier for those without regular access to cash. Lack of cash was frequently mentioned as a barrier to immediate care seeking behavior and as a major problem for 25 percent of the TDHS 2010 maternal respondents seeking care for themselves. The ADDOs best serve those who can afford to buy drugs. For the remotest and poorest communities with limited access to cash, ADDO-supplied treatments may still be out-of-reach given that drug costs are increased to reflect added transport costs in areas far from where wholesalers are located. The extended family system and day labor

---

<sup>2</sup> This finding related to maternal health services rather than sick child care.

seem to be the most common coping mechanism for obtaining cash either to buy drugs or to pay for transport to the next level of care.

### *Health worker performance and quality of care*

Of all health workers managing children at dispensaries on the day of the survey, over 70 percent, and as high as 91 percent in Kigoma, were trained in Integrated Management of Childhood Illnesses (IMCI) and over 75 percent of ADDOs had at least one IMCI-trained staff member. The observational study results show that most healthcare workers at dispensaries are not following the national standards for assessment (IMCI) despite being trained. Of the health workers observed, very few routinely checked for general danger signs (GDS) which are pre-requisite to appropriate triage of very ill children. This is comparable to findings of the Tanzania Service Provision Assessment Survey (TSPA) of 2006, where only 11 percent of consultations observed had children checked for GDS. At the dispensaries in all three regions, only about one in five children were checked for the three symptoms of cough, diarrhea, and fever. Health workers assessed the main symptom/complaint more than the GDS; offering an integrated assessment is still very low in all three regions. Of the 25 case observations at the ADDO, no single child was checked for all danger signs, contrary to the training they have received. At the same time, findings suggest that staff trained in IMCI do little to convert the facility into an “IMCI implementing facility,”<sup>3</sup> contrary to the assumption made at national level about how much influence staff trained in IMCI can exert on facility staff who are not yet IMCI-trained.

Less than half of all children had their weight checked against a Road to Health Chart. The inadequate nutritional assessment, and therefore management, suggests incomplete integration of nutrition in child health services. Health workers are focusing on treating the presenting complaint rather than offering an integrated assessment and management of both overt and underlying illness.

Less than 25 percent of children brought to the dispensary were correctly classified and less than 10 percent of all children exhibiting a danger sign were referred to a higher level facility. Coupled with the low rate of advice on when to return immediately, it would appear that healthcare workers’ perception of severity of illness based on the concept of danger signs is low. The IMCI algorithm provides guidance to health workers where referral is not possible; however, the guidance was not followed.

Although ADDOs have been trained to assess general symptoms and examine the child for danger signs, as well as to carry and correctly dispense quality medicines, only a small number of children are brought to the ADDOs for both diagnosis and treatment. There is a general perception that those visiting the ADDO have already been diagnosed at the dispensary and the ADDO is filling a prescription. During the facility survey, ADDOs were not actively referring those with danger signs to a health facility for evaluation and treatment, which is a role that they are expected to play and have been trained to perform.

### *Rational use of drugs*

On prescribing drugs, few children received correct treatment. Less than 50 percent of children with pneumonia were correctly prescribed a treatment and a third (a quarter at ADDOs) of children in all three regions who did not need an antibiotic left with one. Correct treatment of diarrhea is lowest at dispensaries in part because zinc is often out of stock or there are no functioning diarrhea treatment

---

<sup>3</sup> An IMCI implementing facility is expected to demonstrate changes in patient care including, use of IMCI chart booklets, systematic approach to triage, case management, and counseling. Trained staff is supposed to go back and orient other members to IMCI, share the IMCI chart booklet, and request some changes to flow of patients to ensure that they can practice the new skills. Countries use different definitions but often any facilities with staff trained in IMCI are considered IMCI facilities.



corners (DTCs) for managing dehydration. Although approximately one-fourth of children were incorrectly prescribed an antibiotic, ADDOs were more likely to provide the correct treatment for diarrhea and pneumonia (see Table 13) than dispensary staff. This might be due to the fact that ADDOs generally have a better stock of drugs.

### *Counseling caregivers*

The assessment found that less than a third of caregivers at dispensaries in Kagera and Mtwara were provided with instructions on how to administer drugs. Kigoma region dispensaries and the ADDOs in Kagera and Mtwara, however, performed very well with more than 70 percent of caregivers being given proper advice. FGD participants in Kigoma specifically mentioned that they would like health workers to provide improved counseling on how to administer drugs, particularly when the patient is illiterate.

Overall, healthcare workers at dispensaries and dispensers at ADDOs are not taking advantage of opportunities to offer preventive messages, thereby promoting the general health of children. Only 20 percent of caregivers seen at dispensaries were counseled on insecticide treated nets (ITNs) for children with malaria, and a mere 3 percent of caregivers of children with diarrhea were counseled about household water treatment, hand washing, or sanitation improvements. Of those children observed at an ADDO facility, no child with malaria was counseled on the use of an ITN for the prevention of malaria, and only two of the four children with confirmed diarrhea were counseled about household water treatment to prevent diarrhea.

### *Health facility support (training and supervision, equipment and drug availability)*

Basic equipment including functional DTCs, working scale, timing device for counting breaths and vaccination cards were not available in most facilities. A high proportion of dispensary and ADDO staff managing sick children on the day of the survey were either trained in IMCI or had received ADDO training. Most dispensaries have essential infrastructure (consultation room allowing visual and auditory privacy, a latrine, improved source of water, communication equipment) except in Mtwara.

Two-thirds of the dispensaries (68 percent in Kigoma and Mtwara and 62 percent in Kagera) received supervision in the previous six months that involved observation of case management. However, the poor case management practices identified during the observation portion of this assessment do not confirm that the right supportive supervision is taking place.

The most commonly identified challenge is ensuring an uninterrupted supply of essential pediatric medicines. Since medicines are delivered on a quarterly basis, availability on the day of survey is not a good measure of continuity of supply depending on how close it is to the last delivery. Most dispensaries and drug shops in all regions had at least five to six out of the nine recommended first-line oral medications on the day of the survey. Zinc and antibiotics were out of stock at many dispensaries and just over half of the dispensaries were out of Oral Rehydration Salts (ORS) stock. Most drugs were available at ADDOs or DLDB with the exception of oral iron and vitamin A tablets. The Tanzania End-Use Verification Quarterly Results: February 2012 report (USAID/JSI DELIVER project) confirms on-going challenges in drug availability.

During IDIs, caregivers' most recommended action was to improve the availability of drugs at dispensaries. More than two-thirds of IDI respondents said that medicines are usually out of stock soon after delivery from the Medical Stores Department – this is particularly true of antibiotics and to a lesser extent, anti-malarial drugs.

## **Conclusions**

- Tanzania has a relatively strong health system in terms of infrastructure, policies, and standard operational procedures for packages of services at community level. Greater attention needs to be focused on implementation of these policies in order to assure that the system functions according to set standards. *For services offered at dispensaries, the main issues identified by the data gathered during this assessment that will change access to and use of case management services are: following policies already in place, improving availability of essential first line drugs and increasing the number of staff available to provide services.*
- Dispensaries provide the full range of clinical case management services to children under five for the common childhood illnesses. ADDOs are trained in basic IMCI protocols and they are to ask questions about symptoms, to categorize symptoms by simple or severe, to recognize danger signs, and to provide an initial treatment and then refer the patient to a health facility. They are to provide quality prescription-only drugs to clients who have a prescription in hand. They do not have clinical training and are not expected to diagnose or to become a substitute for the clinical services provided by the dispensary.
- The assessment team found that the ADDOs are serving a vital role as a backup to the dispensary in making drugs available when the dispensary is out of stock. However, they are not counseling caregivers nor checking their understanding of how to administer drugs to sick children. In spite of the original program design that was to ensure that ADDOs were established in rural areas and providing treatments in underserved areas, the majority of ADDOs are located in peri-urban or urban areas. From a business perspective the ADDO owner needs a catchment area with sufficient population and cash in circulation to ensure that the business can survive. Moreover, the further away from urban centers and wholesale sources of drugs, the higher the cost of treatment to the rural consumer and the less likelihood that the client base will have cash readily available to pay for treatments. There is a need to revisit the design assumptions of the ADDO system in view of the finding that they are not located in underserved rural areas and do not serve as an additional point of treatment for the most remote or poorest populations. The ADDO could play a much stronger role in the delivery of care in rural areas if better incentives are placed to establish themselves in underserved areas.
- Quality of services is not up to established standards at either dispensaries or ADDOs. Dispensary staff is not following IMCI protocols and instead, prescribe a cocktail of treatments—not all of which are necessary. These poor prescribing practices significantly increase drug budgets and exacerbate the stock outs of essential medicines. *Improving health worker practices can in fact save drugs in the long run* (e.g. use of rapid diagnostic tests will confirm presence of malaria before treatment is prescribed).
- The DHS 2010 reports somewhat poorer care seeking rates for diarrhea (51 percent), fever/malaria (61 percent ), particularly in rural areas. However, and confirmed by this and other studies (TSPA, 2006), not all care seeking results in correct treatment of the ailment. The current issues limiting access should be discussed in the context of what corrective measures are feasible and affordable. The measures should focus on increasing access to care for those who are underserved and improving the quality of care and therefore, the treatment outcomes for those who are already seeking care. The latter has the potential to further increase care seeking when caregivers experience the benefits of

prompt and correct treatment. Whatever choices are made, mechanisms have to be in place to ensure that health workers (facility-based or community-based) are appropriately skilled, motivated, supervised, supported, and retained, and that drugs and other commodities critical to providing quality services are made available on a regular basis.

## **Recommendations**

On November 6, 2012, stakeholders gathered in a workshop to review the results of this study and to make recommendations for improving appropriate case management of childhood illness in four areas: improving quality of care, improving supply of treatments, increasing user access, and increasing informed demand. The major recommendations of stakeholders participating in the meeting are as follows:

### *Improving quality of care where services are available:*

- Analyze the current supervision system and improve supervision by conducting assessments with supervisors who know how to manage sick children; supplying supervisors with appropriate tools to assess providers' skills and knowledge; implementing a management information system that allows for monitoring of each provider attending children; and assuring that the provider gets frequent feedback on performance.
- Increase the number of supervisors, provide supervisors with skills in coaching and mentoring, widen the scope of supervision to include ADDOS and community health workers, provide incentives associated with improved supervision by district teams, and link quality of care to health facility and DHMT performance.
- Assure that all dispensaries have the required basic equipment and that it is maintained in good working order.
- Improve service delivery competency by assuring that acquisition of appropriate IMCI skills is emphasized and tested during pre-service training and that in-service IMCI training is expanded and made available to all service providers who assess or manage sick children.

### *Improving Access to Supplies and Improving the Supply Chain:*

Within the public sector dispensaries:

- Establish a working group that links the distribution of a minimum of commodities (pneumonia antibiotics, ORS, Zinc, ACTs/RDTs) utilizing the EPI supply chain; advocate with both national and district level health management personnel for adequate budget to prioritize procurement of child health drugs and assure availability of drugs and supplies; and improve forecasting/quantification through integration with existing programs.
- Assure that there are adequate numbers of trained pharmacy personnel and procurement staff at each facility and that district supervisory personnel are routinely monitoring and managing drug, supply and recordkeeping/reporting systems at each facility.

Within the private sector ADDO program:

- Organize ADDOs into associations and link them with a franchise or organized wholesale system so they can improve their pricing structure and lower costs to consumers. Where ADDOs provide backup services for drugs, consider subsidizing the costs of essential childhood medicines for ADDOs so they can pass on these cost savings to the poor. In areas where there are no dispensaries or ADDOs, consider “testing” an iCCM-based community-based distribution system in Tanzania.

*Improving Access to Services:*

- Develop a policy to allow alternative providers including: community health workers to be trained to provide both promotion and curative roles at the village level in hard-to-reach areas in order to bring the treatment to the child either through government, ADDO or NGOs.
- Accelerate expansion of the ADDOs network and include incentives to sustain their operations where business is not “lucrative” or attractive.
- Reduce the number of trainings that take health providers away from the facility and reduce the role of health providers in administrative tasks so that they can provide better case management-related services.

*Improving Demand for Services:*

- Use community structures (village health workers, women’s groups) to identify children at risk who are not accessing services and refer them to services already available; strengthen the skills of community health workers in the 16 key practices so that they can provide essential outreach in the community, and enhance understanding in the community that ADDOS can assess danger signs in key illnesses and provide appropriate treatments.

## **Background**

The Tanzanian Ministry of Health and Social Welfare (MoHSW) is actively working to strengthen interventions to improve care and treatment provided to children under five years of age. Following a multi-partner regional meeting on Global Action Plan for the Prevention of Pneumonia and Community Case Management in Nairobi in January 2011, the team from Tanzania wanted to know the reach and quality of case management services provided by the existing network of public sector dispensaries and private sector Accredited Drug Dispensing Outlets (ADDOs). In partnership with the MoHSW, United States Agency of International Development/Tanzania (USAID/Tanzania) recognized and responded to this issue by inviting two of its key global projects, the Maternal and Child Health Integrated Program (MCHIP) and the Strengthening Health Outcomes through the Private Sector (SHOPS), to Tanzania to work with local partner, Population Services International (PSI), to conduct an assessment of public sector dispensaries and ADDOs, which were identified as the first points of contact for sick children. The purpose of this study is to assess the effectiveness of dispensaries and ADDOs and to identify gaps in quality, access, and utilization of these service points particularly in rural areas. This assessment aims to provide a guide for the MoHSW, donors, and other program partners working to improve both access to and quality of care for children under-five.

### ***IMCI training and implementation***

Integrated Management of Childhood Illnesses (IMCI) was introduced in Tanzania in 1996 at the facility level.<sup>4</sup> This was immediately followed by the establishment of an IMCI unit, appointment of a national coordinator, and a national IMCI budget line item.<sup>5</sup> In addition, IMCI has been included in pre-service training for clinical officers and nurses; eight zonal training centers were established to support district IMCI trainings. IMCI is the standard against which all frontline curative services for children are assessed.

Despite these positive policy decisions, scaling up IMCI in Tanzania has faced challenges common to many IMCI programs worldwide. As a result, Tanzania has not achieved the World Health Organization (WHO) recommendation that at least 60 percent of health workers seeing sick children in health facilities should be trained in IMCI. Some research found that national coverage of health workers trained in case management in Tanzania was estimated to be only 14 percent.<sup>6</sup> According to studies conducted in Tanzania, including the Service Provision Assessment Survey (TSPA, 2006) even when trained, care provision falls short of the expected standards. Reasons cited for these problems include limited availability of recommended first line drugs and lack of consistent and correct supervision to reinforce skills.<sup>7</sup>

### ***Community health resources in the public sector - Dispensaries***

Tanzania has a hierarchical health system from primary care at the community level to tertiary hospitals. The lowest level designated to provide curative child health services is the dispensary. A dispensary is run

---

<sup>4</sup> Policy Brief, June 2009: Ifakara Health Institute, Tanzania/ Consortium for Research on Equitable Health Systems.

<sup>5</sup> WHO and Novartis Foundation for Sustainable Development (2007). ICATT Integrated Management of Childhood Illness Computerized Adaptation and Training Tool. <http://www.icatt-training.org/Implementation/Tanzania/tabid/87/Default.aspx> (11 Jan. 2012)

<sup>6</sup> Prosper H and Borghi J (2009). IMCI Implementation in Tanzania: Experiences, Challenges and Lessons. Presented to DFID by the Ifakara Health Institute, Tanzania. CREHS Policy Brief. [http://www.crehs.lshtm.ac.uk/downloads/publications/Tanzania\\_IMCI\\_policy\\_brief.pdf](http://www.crehs.lshtm.ac.uk/downloads/publications/Tanzania_IMCI_policy_brief.pdf) (4 Jan. 2012).

<sup>7</sup> Ibid.

by a cadre of health workers, with formal health training, under the supervision of the District/Council Health Management Teams. These dispensaries are staffed by one or more of the following cadres: 1) enrolled nurses with two years of training; 2) clinical officer assistants (certificate holders, upgraded former rural medical aides); and, 3) clinical officers (diploma holders who are in charge of a dispensary). These facility-based health workers provide basic case management for common illnesses as well as diagnostic services such as microscopy and Rapid Diagnostic Tests for malaria (mRDTs). Their responsibilities include dispensing prescription drugs from a set list of available drugs, such as antibiotics for pneumonia. In addition, dispensary staff provide preventive services and community outreach. Mobilization in communities is supported by a network of volunteer Village Health Workers (VHWs). The Tanzania Service Provision Assessment Survey of 2006 indicated that “basic services” were available in over 75 percent of facilities. Nevertheless, the availability of skilled providers and the quality of these services provide a national challenge.

In 2006, the Government of Tanzania (GoT) developed the Primary Health Services Development Program (PHSDP) or Mpangowa Maendeleowa Afya ya Msingi (MMAM) covering the period 2007-2012. MMAM intends to accelerate the provision of primary health care services in rural communities by establishing one dispensary in each of the estimated 10,000 villages in mainland Tanzania by 2012. By extending dispensary services to all villages, the GoT expects to significantly improve the reach of primary services to all segments of the population. According to MMAM, as of 2009, there were 4,878 dispensaries and 5,122 villages without these services. MMAM additionally proposes the establishment of a paid Community Health Worker (CHW) who will be responsible for conducting outreach from the dispensaries who will provide supervision of the CHWs’ outreach work.

Although some progress has been made by the GoT and development partners, implementation of the vision is slow. In Mtwara rural, for example, according to the Tanzania Human Rights report, 2010, there are still only 34 (22 percent) out of the 155 expected dispensaries. Only 35 percent of all Tanzanians have access to health facilities. Some reasons given for this low use are the inadequate number of health facilities and the lack of skilled health care professionals, resulting in long waiting times for services; there is an estimated staff vacancy rate of 60 percent in the most remote districts.<sup>8</sup>

VHWs have been an integrated part of the health system since 1972 and are responsible for conducting a wide variety of health promotion, health prevention, community mobilization, and palliative care activities. There are more than 8,000 VHWs working in a variety of vertical programs and, depending on the mandate and funding of the program, they may provide one or all of the activities mentioned above. As a national policy, VHWs are not allowed to diagnose illness, prescribe treatment or dispense any drugs, although when specially trained certain programs do allow them to dispense drugs (malaria medications, for example).

### ***Community health resources in the private sector - ADDOs***

Tanzania’s private sector has become increasingly recognized as an important source of information and access to medicines. Significant investment has been made in converting unaccredited drug shops (DLDBs) into ADDOs. The overall objectives of the ADDO program are to provide improved access to affordable, quality, and effective medicines and other health products and to improve the quality of pharmaceutical dispensing services for rural, peri-urban, and other underserved populations.

Over 7,100 dispensers have been trained to date in the following regions: Coast, Dodoma, Lindi, Kigoma, Mara, Manyara, Mbeya, Morogoro, Mtwara, Ringa, Rukwa, Ruvuma, Shinyanga, Singida, and Tanga.

---

<sup>8</sup> Tanzania Human Rights report, 2010

The overall goal of the Tanzania Food and Drugs Authority (TFDA) is to complete the conversion of DLDBs into ADDOs in the remaining seven regions in mainland Tanzania by the end of 2012. Once a region has transitioned to the ADDO program, all remaining drug shops, who have not participated in the ADDO program are to be closed by the TFDA.

All ADDO dispensing staff members are accredited through a TFDA-approved course for dispensers. This 30 day course provides basic dispenser training on:

- Legal, regulatory, and ethical issues;
- Rational drug use of ADDO-approved medicines;
- Common indications and contraindications;
- Common dosages and side effects; as well as,
- Effective communication skills in counseling for caregivers on understanding the treatment dose and regimen.

While the training is primarily focused on appropriate drug dispensing practices, ADDOs receive an abbreviated 3 day IMCI training that includes assessing clients, understanding and categorizing symptoms, and recognizing key danger signs and conditions which they should immediately refer the caregiver to a dispensary or hospital. ADDOs are trained to assess the child, but are to provide only an initial treatment and refer the child to a health facility. ADDO dispensers can only provide prescription drugs to clients with prescriptions.

## **Objectives of the Assessment**

The objective of this study is to assess the accessibility and quality of child health services provided through the current network of public dispensaries and private sector ADDOs, specifically targeting hard to reach populations in rural and semi-rural districts. The study reviews the quality of services provided and identifies the prevailing perceptions of caregivers regarding the services provided by these community service points, specifically looking at their perceptions around *curative services* for malaria, pneumonia, and diarrhea - the leading causes of mortality in children under five years of age.

In light of recent efforts to promote community-based services for children under five, and the fact that in the formal health system, the lowest point of care for a sick child in Tanzania is the primary health care facility. Therefore, this study reviews services at dispensaries and ADDOs and attempts to investigate the following questions:

## ***General Question I***

What is the present reach of existing services? Can they be expanded to ensure the greatest coverage of children in need of services under the constraints of the current infrastructure and network?

### **Specific Questions**

1. What segments of the population do the dispensaries and ADDOs serve?
2. To what extent are these two main platforms (public dispensaries and private ADDOs) reaching the same or different segments of the population?
3. Who is currently being reached and who is not being reached, taking into consideration factors such as geography, socioeconomic status, and education?
4. For those not being reached, what are the principal barriers (financial, geographic, perception of need, perception of quality) and how could these barriers be overcome within existing platforms?
5. What potential modifications can be made for each platform which effectively removes these barriers to access?

## ***General Question II***

What is the available quality of care and utilization of services?

### **Specific Questions**

1. To what extent are service providers in these two platforms providing *appropriate care* (i.e., in accordance with national guidelines and standards of care)?
2. To what extent is dispensary staff appropriately skilled in the use of IMCI protocols?
3. How adequately are these service providers addressing nutrition (e.g., case identification and appropriate care and referral for acute malnutrition)?
4. To what extent are these service providers appropriately taking advantage of opportunities to address related prevention interventions (immunization, insecticide treated nets [ITNs], hygiene and water)?
5. What is the difference in service quality between ADDOs and the unaccredited private drug shops (DLDB)?

## **Methodology**

### ***Overview***

The assessment was initiated in June 2011 with introductory field visits to dispensaries, ADDOs and relevant GoT and nongovernmental stakeholders. Data from the field were collected in January 2012 and the team conducted additional interviews with health personnel at the regional and local (dispensary and ADDO) levels in Mtwara in February 2012. The study team approached data collection from multiple angles. The target population for this survey was all rural and semi-rural MoHSW health dispensaries and private ADDOs in Mtwara and Kigoma, and DLDB (potential ADDOs) in Kagera.

To determine the quality of services rendered by these rural health service points and the perception of the community with respect to those services, two major surveys were conducted:

1. The **Health Facility Survey** is composed of four parts: Observation, Exit Interview, Re-examination, and Equipment and Supply Checklist. This survey was conducted at randomly



selected health facilities and ADDOs in the three target regions. The target population for the observation portion of the facility survey was sick children aged 2-59 months with symptoms of diarrhea, fever, or cough/difficult breathing. Reported findings are also based upon descriptive analysis using 41 service quality, supervision and drug availability indicators.

2. **Household-level survey questionnaires** (also known as In-Depth Interviews or IDIs) were administered to 1,511 caregivers of children under five, randomly selected from lists provided by dispensaries in each target district. In-depth narratives were conducted with 10 caregivers and photo narratives were gathered from six additional caregivers.

In addition, focus group discussions (FGD) with nine Community Health Boards (one per district) were conducted to assess their current oversight of health resources in the community and their general views on access to and the quality of health services rendered in their districts. Transcripts of the individual interviews with caregivers, narratives, photo narratives, and FGDs were reviewed for major themes and information. These interviews and discussions contributed to the overall analysis of findings.

Additional primary and secondary data were collected using qualitative approaches and secondary analysis of the 2005 and 2010 Tanzania Demographic and Health Survey (TDHS) data.

### ***Sample Size and Sampling Strategy/Design***

To gather data on appropriate treatment practices being implemented in public sector dispensaries and in accredited and non-accredited drug dispensing outlets, the study employed a three-stage sampling process. At the first stage, regions were categorized based on the status of the ADDO program implementation process; three were selected purposively: Mtwara (mature ADDO program), Kigoma (new ADDO program), and Kagera (no ADDO program but has DLDB in operation that are considered potential ADDOs). In the three selected regions, the objective was to select a representative probability sample of rural/semi-rural districts and health facilities.

At the second stage of sampling, districts were selected using probability proportional to the number of health facilities in each region taking into account the rural and semi-rural profiles of each district. Only districts that are rural or semi-rural were eligible for inclusion. Three districts were selected in Mtwara region, four districts from Kagera region and two districts from Kigoma region. In the initial random sampling of districts, Kibondo was among the districts selected in Kigoma region. However, the district had not compiled a list of all accredited ADDOs, hence the district was replaced by Kasulu which had already finished the compilation of all accredited ADDOs.

At the third stage, a random sample of health facilities and ADDOs were selected in each of the respective districts from a list of all health facilities, ADDOs and potential ADDOs obtained from the respective District Medical Officers. From this list, an equal probability sample of public dispensaries was selected. A similar strategy was followed for ADDOs and potential ADDOs. The sample sizes were derived from calculations using rapid health facility assessment software<sup>9</sup>. The driving assumption of this approach is that the study should identify whether or not a minimal proportion of health facilities in the district are performing to an acceptable standard. For the purpose of this study, we assumed that at least 80 percent of health facilities must perform adequately (i.e., meet or exceed minimum standards) for the district to pass.

### **Dispensaries**

---

<sup>9</sup> The Rapid Health Facility Assessment (R-HFA), MCHIP. <http://www.mchip.net/node/791>

A total of 96 dispensaries were visited during the survey: 37 located in two districts in Kigoma region (23 in Kasulu, 14 in Kigoma rural), 32 in four districts in Kagera region (8 in Muleba, 10 in Bukoba rural, 8 in Misenyi and 6 in Chato) and 27 located in three districts in Mtwara region (4 in Nanyumbu, 11 in Newala, and 12 in Mtwara rural) (See Table 1). From these three regions, a total of 273 case observations were conducted and collected (Table 1). All public sector dispensaries surveyed are under direct supervision of the MoHSW while ADDOs are privately owned businesses. The type of health workers on duty and attending to sick children are described below in Table 2.

### ADDOs and DLDBs

A total of 58 ADDOs were surveyed: 32 ADDOs in the Kigoma region (18 in Kasulu district, 14 in Kigoma rural), all of which were relatively new ADDOs, some of which were still waiting for their final inspection and certification. Nine drug vendors were visited in Muleba district of the Kagera region. As there has been no ADDO trainings conducted in this district and only one of the facilities showed a registration document to the interviewers, these were assumed to be DLDB. A total of 17 ADDOs were visited in Mtwara region (10 in Newala district, 9 in Nanyumba district, and none in Mtwara rural). These are relatively mature ADDOs, given that the Mtwara training originally took place in 2006 and continues through the present time.

**Table 1: Planned and actual sites visited and the number of case-management observations conducted**

Target Institution	Planned sample	Actual sample (TOTAL)	Kigoma	Kagera	Mtwara
Number of dispensaries	86	96	37	32	27
Number of case observations in dispensaries	258	302	93	104	76
Number of ADDOs/ potential ADDOs (DLDB)	106*	58	32	7	19
Number of case observations at ADDO	327*	25	1	0	24
Number of caregiver IDIs	1,500	1,511	490	525	496
Number of FGDs with Community Health Boards	14	12	3	5	4

\*Number of actual ADDOs available was less than anticipated during the research design phase and case observations at ADDOs were not done in two regions because most clients went to the ADDO to buy medicine prescribed by dispensary staff and did not bring a child for evaluation.

**Table 2: Distribution of health workers across the health facilities visited (on the day of the survey) and the number of case-management observations conducted**

Health Workers	Regions	Total number of health workers	Number of health workers trained on IMCI	Number of cases observed
Clinical Officer	Kigoma	10	10	14
	Kagera	12	10	29
	Mtwara	7	7	23
Nurses	Kigoma	25	24	66
	Kagera	15	10	42
	Mtwara	8	5	23

Medical Attendant	Kigoma	7	5	9
	Kagera	13	8	27
	Mtwara	10	9	30
Others: CHWs and volunteers	Kigoma	2	1	4
	Kagera	3	2	6
	Mtwara	0	0	0

### ***Survey Instruments and Data Collection***

The study team provided draft English language instruments for the survey (pre-coded, closed-ended questions). The research organization (University of Dar es Salaam) reviewed and finalized the instruments, translated the instrument into Kiswahili, back-translated into English, recruited and trained interviewers and field supervisors, field tested the instruments, and conducted the surveys.

### **Facility-level Data Collection**

Survey data at the facility were collected using four methods: 1) an observation of health worker or drug dispenser activities in the assessment, classification, counseling, and treatment recommendations for children 2-59 months of age presenting at the health facility with diarrhea, fever, or cough/difficult breathing; 2) face-to-face exit interviews with caregivers of children whose examination was observed; 3) re-examination of 100 percent of the children by a validated IMCI-trainer to determine if correct treatment and drugs were delivered; and, 4) face-to-face interviews with the head of the health facility or drug shop to obtain information on the availability of required supplies and equipment. This portion of the facility survey also included an examination of facility treatment records for the past quarter. Participants for the observation were conveniently selected targeting caregivers with children aged 2-59 months who were presenting with a sick child with diarrhea, malaria, or cough/difficult breathing and who were willing to take part in the study.

**Table 3: Number of children observed by age for dispensary and ADDO**

<b>Age of children observed</b>	<b>Kigoma</b>	<b>Kagera</b>	<b>Mtwara</b>	<b>ADDO</b>
Under 2 years	33	43	37	12
Over 2 years	61	61	63	13
Total	94	104	100	25

Because IMCI is a specialized clinical protocol and assumed to be the ‘gold standard’ for this study, case observation and re-examination were conducted by IMCI trainers to observe and check health worker assessment skills and validate the classification provided by the health workers. 273 observations were completed at dispensaries and 25 observations were completed at ADDOs.

**Table 4: Number of sick child classifications based on gold standard re-examination**

<b>Child classification</b>	<b>TOTAL</b>	<b>Kigoma</b>	<b>Kagera</b>	<b>Mtwara</b>	<b>ADDO</b>
Child needing referral/ Child with one or more danger signs	55	3	26	18	8
Severe pneumonia/very severe disease	0	0	0	0	0

Pneumonia	86	9	36	36	5
Diarrhoea	70	28	20	18	4
Malaria	108	31	36	33	8
Measles	6	3	2	1	
Others	12	2	6	3	1

### **Household-level Surveys with Caregivers**

In the same districts sampled for the health facility survey, IDIs with caregivers were conducted to better understand: 1) caregiver perspectives with regard to convenience, quality, responsiveness, and affordability of services and medications provided by both public and private sector rural health facilities, and 2) the principal barriers (financial, geographic, perception of need, etc.) faced by caregivers when seeking treatment for their child’s illnesses in rural areas.

An IDI interview guide in English (with closed-ended responses) was provided to the research organization. The research organization translated the guide into Kiswahili. A probability sample of caregivers of children 2-59 months in each sampled district in each of the three regions was selected. Selection of caregivers to participate in the IDI was based on lists provided by Maternal and Child Health attendants at the dispensaries targeting mothers with children under-5 years of age. The target sample for individual interviews was 500 caregivers in each region. This provided estimates of population percentages for each region with a margin of error of plus or minus 4.3 percentage points at 95 percent confidence interval. The research team completed 1,511 IDIs with caregivers of children aged 2-59 months.

### **Qualitative Data Collection**

FGDs with nine Community Health Boards in communities in each of the regions (two in Kagera, three in Kigoma, and four in Mtwara) were conducted to assess their current oversight of health resources in the community and their general views on access to and the quality of health services rendered in their districts.

In addition, individual open-ended narrative discussions were held with 27 caregivers (three in each study district), and photo narratives<sup>10</sup> were implemented with six caregivers to obtain detailed information on their current health seeking behaviors as well as motivators and barriers to care seeking.

### ***Data Analysis***

Following findings are based upon descriptive analysis of 41 service quality, supervision and drug availability indicators (see Annex 1 for details). Results of the individual interviews with caregivers, narratives, and FGD transcripts were reviewed for major themes and information that would contribute to the overall analysis of findings. Secondary DHS analyses also contributed to the findings presented below.

### ***Study Limitations***

This study provides insight into the availability, quality, and user perception of clinical case management for childhood illness in rural areas of Kagera, Kigoma, and Mtwara regions of Tanzania. The results are

<sup>10</sup> Respondents were given a camera and asked to take photos of their homes, clinics, and other aspects of their life situations. These were then described to the interviewer.

not generalizable because the sampling of respondents was based on convenience sampling and in some cases, lack of adherence to the study protocol (e.g., only children presenting with symptoms of cough, diarrhea or fever were to be included in case observation) during data collection compromised the quality of data collected. For case management observation, some discrepancies were found between the classification and treatment recommended by the ‘gold standard’ which suggests that some of the people doing re-examination were not skilled to the level of ‘gold standard’ or prescribed treatment was based on what was available, and not the IMCI recommended drugs. In the case of ADDOs, based on a lack of standard approach to data collection, an insufficient number of observations were made limiting our ability to draw conclusions. Lastly, the study lacks any precision measurement to guide interpretation of findings and strength of opinions derived from the findings. We also did not survey any private or faith-based clinics in the target regions, given the relatively low use rates of these facilities for primary services in rural areas.

### **Problems/Challenges Encountered in Data Collection**

- The number of ADDOs/potential ADDOs documented varied from the list of ADDOs that were available at the district. Survey staff visited to confirm locations and ADDO accreditation (see Table 1).
- Our underlying assumption, given that the MoHSW viewed the ADDO as a source of primary level care in rural communities, was that ADDOs provided basic assessment/diagnostic as well as treatment services. Given that ADDO dispensers are trained in IMCI (initially 6 days and later reduced to 3 days of training), the study aimed to look at whether physical assessment of the child was done at the ADDOs before either referral or sale of medicines. However, during data collection, we confirmed that only few caregivers used the ADDOs as first point of contact and even fewer brought their sick child with them. ADDOs primarily provide medications to caregivers with prescriptions and occasionally examine critically ill children and refer them to health facilities.
- The original design of the study was intended to examine the difference in quality of care between mature and new ADDOs and drug shops. During the study, so few children were brought to the ADDO for examination, that this became impossible to determine. Some slight differences are noted in the discussion below.
- In some cases, caregivers refused to participate in exit interviews. Caregivers complained that they had waited for a long time before they received care and hence they could not wait to take part in the exit interviews. This explains the mismatch between the number of observations and exit interviews conducted.
- In more than 50 percent of the health facilities visited, the clinical officer - who according to the MoHSW is the overall in-charge of the health facility - was absent, either on study leave or vacation. In these dispensaries, the team worked with the person who was responsible for the day to day management of the health facility/attending to patients (often the nurses/nurse attendants). The staff absence was verified with key government informants as not an uncommon occurrence which the health administrators are not able to prevent.
- IDIs tended to be administered to individuals from household lists provided by the dispensary, thus those households living in closer proximity to the dispensary, making it difficult to obtain the opinions of caregivers located far from the dispensary who fail to access services. For this reason, we examined TDHS data on barriers to seeking care in an effort to better understand assessment findings.

## Results

### *Access, Acceptability, and Barriers to Seeking Care*

Physical access to health services was assessed by asking how many hours the dispensary or ADDO is open in a 24 hour period including availability of a staff member who can see clients after regular hours (see Table 5). Most government dispensaries (67 percent) are open during the week from 7:30 am to 4:00 pm and in addition, have staff “on call” 24 hours. Mtwara reported the highest number (76.8 percent) of dispensaries being accessible over a 24 hour period. In Kigoma and Kagera, IDI participants reported 66.5 percent and 59.6 percent of dispensaries, respectively, are accessible over a 24 hour period. The facility survey found that only four (7 percent) of the 58 drug dispensers reported having 24 hour staff coverage, although most are open 18 hours a day.

**Table 5: Access to health services**

Indicator	Dispensaries				ADDO N=58
	Kigoma N=37	Kagera N=32	Mtwara N=27	Total N = 96	
1. Number and percent of dispensaries that offer basic curative child health services for 24 hours (includes access to health worker after dispensary is closed)	25/37 66.5 %	19/32 59.6 %	21/27 76.8%	65/96 67.7%	4/58 6.9%

The vast majority of caregivers (ranging from 85 percent in Kigoma to 97 percent in Mtwara) listed the public dispensary as their first choice of care outside the home. FGD participants further substantiated this finding by stating that dispensaries are their first choice of care because they are cost-free. Only in Kigoma region did a significant number of caregivers (11 percent) mention either DLDB or ADDOs as their first choice for care.

Participants of the FGDs reported that common issues affecting access to services at dispensaries are long waiting times, insufficient numbers of staff, insufficient drugs, and poor response to emergencies. Distance was not reported as a barrier; caregivers stated they are willing to walk two to three hours for care if they cannot afford mechanized transport.<sup>11</sup> This was further confirmed by the TDHS 2010 findings, where over half of the respondents reported that distance to facility was not a problem and less than a quarter reported it as a big problem.

Most ADDOs are located in the urban or peri-urban settings, often in the same village as the dispensary, and serve as a backup source of drugs, especially when supplies at dispensaries are out of stock.<sup>12</sup> Caregivers interviewed reported that most dispensaries and ADDOs in Kigoma and Mtwara regions<sup>13</sup> were conveniently located within five kilometers and that it took less than 60 minutes to walk to the nearest dispensary or ADDO. Most reported no cost or less than Tsh 500 (US\$0.32) to get to the dispensary, ADDO, or DLDB. Access was significantly different in Mtwara where only 15 percent of respondents said they had access to care outside of working hours. FGD participants stated that ADDOs

<sup>11</sup> It is important to recognize that the sample for IDIs may have conveniently targeted caregivers residing close to the dispensary.

<sup>12</sup> There is consensus among stakeholders that the drug supply system needs to be improved. It does not appear that dispensary staff, who often own ADDO shops, are withholding drugs and referring caregivers to their shops in order to turn a profit.

<sup>13</sup> Personnel had received ADDO training in these two districts. Kagera has only DLDB.

have essential prescription drugs; they are open longer hours (usually from 8:00am-10:00pm); they are located near the dispensary and that they feel they provide sound medical advice. However, they reported that their prices are high and inconsistent. Some participants stated that they use the ADDOs as a first source of care when the dispensary is closed or when the ADDO is nearby and the dispensary is far. FGD participants stated that it is possible to negotiate with staff at the ADDO for half a dose or treatment immediately and half later.

Over two thirds of respondents reported that their choice for care for a child who is *seriously ill and requires urgent medical care* continues to be the public dispensary for residents in Kigoma (63 percent), Kagera (72 percent), and Mtwara (86 percent). In Kagera region, district hospitals were also a preference for urgent care for some (14 percent). In Kigoma region, duka la dawa (both DLDB and ADDO) were preferred for urgent care by 21 percent of respondents over other sources.

These findings were further corroborated by FGD participants who stated that they seek care from mission or regional hospitals if the child is critically ill. Many stated they would go to a private clinic based on the quality of care, the shorter waiting times, and the good treatment by providers at those facilities, although cost was mentioned as a barrier to accessing private clinics. Despite the cost barriers, respondents stated that they would find the funds to access these facilities if the services of care were perceived to be better. FGD participants reported that at private clinics, children are examined before medications are prescribed, implying that higher quality services are provided and that this is worth the cost.

Finally, and consistent with primary data, the 2005 and 2010 TDHS data also identified public and private health delivery points as the main sources of care for episodes of diarrhea, fever, and for short/rapid breaths. TDHS secondary data analysis compares data from 2004-2005 to 2010 (see Table 6 below) to provide more detailed insight into sources of care for these three childhood illnesses.<sup>14</sup> The government dispensary was consistently the most significant source of care for all three conditions, ranging from 26 percent in 2005 for diarrhea and fever, to 34 percent for short/rapid breaths. By 2010, participants indicated that the dispensary became an even more significant source of care for all three conditions.

**Table 6: Sources of care for childhood illness, TDHS 2005 and TDHS 2010**

Source of Care	Diarrhea (%)		Fever (%)		Short/rapid breaths (%)	
	2005	2010	2005	2010	2005	2010
Didn't seek care	37.8	31.6	20.2	14.9	13.5	16.8
Private (facility)	4.7	4.1	6.2	6.4	5.1	5.7
Religious/NGO	3.3	4.3	5.1	6.2	6.4	5.8
Other/Pharmacy*	14.7	15.6	23.5	19.9	22.6	20.1
Government hospital	5.4	4.0	7.9	6.6	8.5	7.6
Government health center	7.1	10.7	10.6	11.8	10.2	9.8
Government dispensary	26.3	30.2	26.5	35.3	34.4	34.5

\* ADDO was not identified as a specific source of care; our assumption is that it is part of Pharmacy

<sup>14</sup>Note: ADDOs or duka la dawabaridi are not mentioned explicitly in TDHS surveys but from the breakdown of responses, assumed to be a major segment of the other/pharmacy category.

## Client Satisfaction

In spite of frequent drug stock outs and reported long waiting times, more than 70% of respondents overall reported that they were satisfied with services being provided at dispensaries, while those at Mtwara were slightly less pleased (66 percent). About a third of respondents rated the attitude of staff as friendly and available. However, IDI respondents in Kigoma particularly expressed concern that staffs were taking ‘insufficient time’ to evaluate children. Interviewee remarks and FGD responses stated that caregivers wanted overall shorter waiting times prior to seeing health care providers and better availability of medicines.

Participants in Mtwara and Kagera reported relatively high client satisfaction in terms of staff; they felt they were tolerant, tried their best despite large numbers of waiting patients, and provided good services despite working under difficult conditions. Respondents found healthcare workers to be ready to assist outside of normal working hours and that they have a positive attitude toward the communities they serve. FGDs in Kigoma reported a more frustrated view of healthcare workers, stating they drank alcohol, used offensive language, accepted bribes for earlier treatment, and often delayed opening the facility each day. They also indicated that healthcare workers were often not responsive to patients, especially in emergency situations.

Nearly all respondents to the caregiver survey found ADDO staff friendly and helpful. Of the 25 children whose treatment was observed at the ADDO, 15 (60 percent) of the caregivers thought that the services at the ADDO were good.

**Table 7: Client satisfaction, by facility type and region**

Indicator	Dispensaries				ADDO N=25
	Kigoma N=87	Kagera N=93	Mtwara N=71	Sum N=251	
38. Caregiver thought that services at the dispensary were good	61/87 70.1%	72/93 77.4%	47/71 66.2%	180/251 71.7%	15/25 60.0%

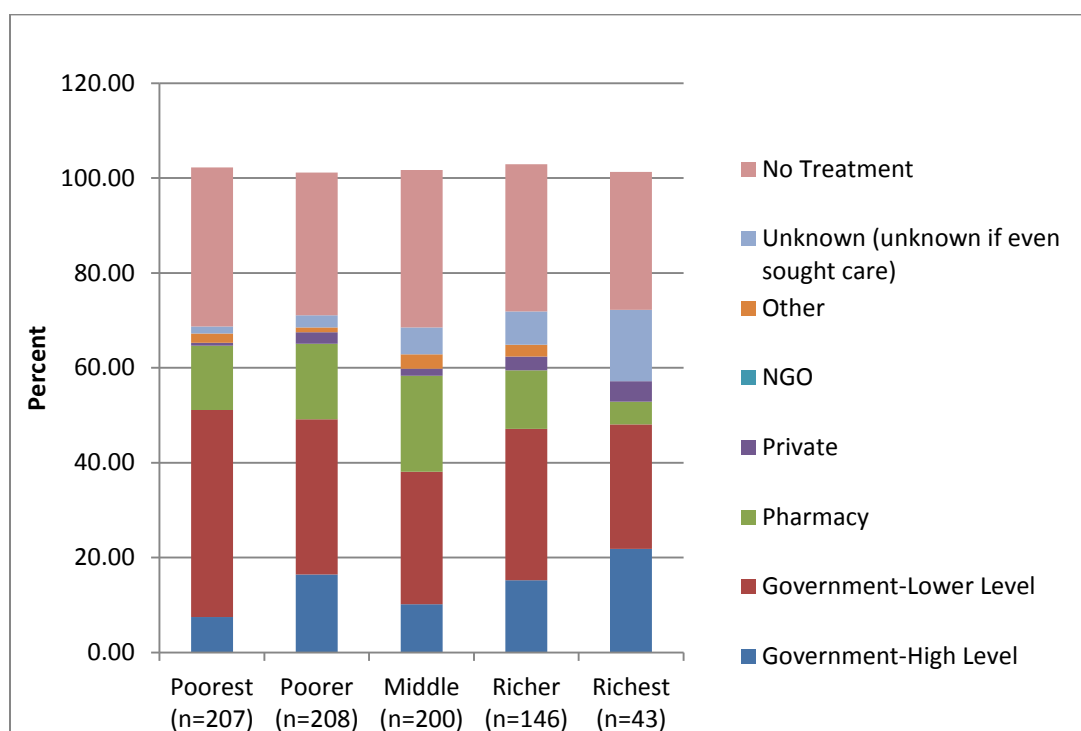
## Barriers to Care Seeking

The TDHS data were analyzed to assess reported barriers to seeking treatment for diarrhea, pneumonia, and malaria. Only 10 percent of respondents reported that knowing where to access services and gaining permission to seek care as major challenges. In 2010, distance to services was ‘no problem’ for 58 percent of respondents while 43 percent of respondents found it as a ‘problem’ and 22 percent as a ‘big problem’. In 2005, distance was a ‘small problem’ for 21 percent of respondents and a big problem for 45 percent.<sup>15</sup> In rural communities, about 15-20 percent of caregivers with ill children failed to seek treatment when the child had a fever or difficulty breathing. Diarrhea was not viewed as seriously, with about 33 percent of those in rural populations in all wealth quintiles not seeking treatment for a diarrheal episode for a child under five years (Figure 1).

<sup>15</sup>The responses to this question were different in 2005 and 2010. In 2005 the responses were big problem/small problem. In 2010, the responses were no problem/big problem/not a big problem.



**Figure 1: Source of Care for Diarrhea in Rural Areas of Tanzania, by Wealth Quintile<sup>16</sup>**



During the IDIs, caregivers were asked their reasons for delaying care seeking. Primary reasons stated include an inability to afford going to the drug shop to purchase medicines, having insufficient funds in an emergency, the perception that the child did not appear very sick, and that they simply preferred a traditional healer<sup>17</sup> (see Table 8). Almost 20 percent of respondents selected “Other” as an answer choice. Besides perception of severity of illness, these findings provide insights into reasons for not seeking care.

**Table 8: Caregiver reasons for delaying care seeking**

Reasons	Kigoma	Kagera	Mtwara	Total N=1511
Child not very sick	81/490 16.5%	154/525 29.3%	120/496 24.2%	355/1511 23.5%
Trust family members' advice	38/490 7.8%	55/525 10.5%	32/496 6.5%	125/1511 8.3%
Cannot afford to go to duka la dawa	238/490 48.6%	21/525 4.0%	12/496 2.4%	271/1511 17.9%
Live too far away from dispensary	82/490 16.7%	48/525 9.1%	33/496 6.7%	163/1511 10.8%
Trust traditional healer	56/490 11.4%	70/525 13.3%	77/496 15.5%	203/1511 13.4%
Dispensary/duka closed	87/490 17.8%	15/525 2.9%	35/496 7.1%	137/1511 9.1%
Mother is irresponsible	29/489 5.9%	117/525 22.2%	154/497 30.9%	300/1511 19.9%

<sup>16</sup> TDHS, 2010

<sup>17</sup> Although less than one percent of IDI respondents stated that they regularly seek care from a traditional healer.

Lack of resources (money)	38/489 7.7%	50/525 9.5%	58/497 11.6%	119/1511 7.9%
Other	82/490 16.8%	92/525 17.5%	113/496 22.8%	287/1511 19.0%

### ***Health Worker Performance and Quality of Care***

Results in this section primarily relate to dispensaries due to the fact that case observations were conducted in relatively few ADDOs. A total of 273<sup>18</sup> case observations and exit interview pairs were completed at dispensaries in the three regions. Out of the 32 ADDOs visited in Kigoma, only one observation was conducted-- in Kigoma rural district. Of the 19 ADDOs visited in Mtwara region, 24 observations were conducted--in Nanyumba district only. No observations were conducted in Kagera district.

### **Assessment of General Danger Signs**

According to the IMCI protocol, children who are brought to the health facility are first to be checked for general danger signs (GDS) of vomiting everything, not able to drink or breastfeed, convulsions-- a pre-requisite when applying appropriate triage of severely sick children and expediting the care needed. It is an essential step in the IMCI algorithm and contributes to ensuring timely emergency care.

Table 9 indicates that of those health workers observed, very few (15 percent) routinely checked for GDS. In Mtwara, it was reported that just over one in four children were checked for GDS, 15.3 percent in Kagera, and only 6.4 percent in Kigoma. This is similar to the findings of the TSPA, 2006 where all three danger signs were assessed during only 11 percent of sick child consultations. Supervisors should enforce this skill regularly during supervision as it prompts the healthcare worker to provide the urgent care needed in a timely manner. Although ADDOs have not been trained to diagnose a sick child, they have been trained and are expected to, at minimum, assess the child for danger signs and provide urgent referral. None of the few children brought to an ADDO during the survey were checked for all three danger signs.

**Table 9: Assessment of GDS, main symptoms, and feeding by health facility and regions**

Indicator	Dispensaries				ADDOs N=25
	Kigoma N=93	Kagera N=104	Mtwara N=76	Total N=273	
2. Child checked for three danger signs: (vomiting everything, not able to drink or breastfeed, convulsions)	6/93 6.4%	16/104 15.3%	20/76 26.3%	42/273 15.4%	0/25

### **Assessment of Main Symptoms**

It is important that all children brought to the dispensaries be assessed not only for presenting symptoms but also for other symptoms related to major childhood illnesses in Tanzania such as: diarrhea, cough, fever, malnutrition, and anemia. This practice is a core necessity of the IMCI algorithm and counters the common practice by health workers to assess only the symptom related to the presenting complaint. Asking caregivers to report on other symptoms increases the rate of early detection and management of

<sup>18</sup> Note: 302 observations were done but 29 dropped out of exit interview or had non-IMCI problems and are therefore not included in the analysis.

childhood illnesses, potentially preventing complications and mortality associated with a lack of a proper classification.

Table 10 provides facility data for the three regions; frequently, healthcare workers did not follow the algorithm and did not assess children for all three symptoms likely missing co-existing illnesses. Less than one-fifth of the children were checked for diarrhea, cough, and fever. Kigoma region reported the lowest adherence to the algorithm: only 17 percent of children were checked for all three symptoms. With the exception of Mtwara region, health workers assessed GDS and some main symptoms; however, conducting integrated assessments is still very low in all three regions.

Very few (10.7 percent) children in Kigoma region had their weight checked against a Road to Health Chart (RHC). In Kagera (43 percent) and Mtwara (55 percent), about half of children had their weight checked against the RHC. The other regions reported a slightly higher adherence; however, for all sites surveyed, there is much room for improvement. Because malnutrition is often an underlying cause of illness and regularly goes unnoticed until in advanced stages, checking children's weight against the RHC enables health workers to detect malnutrition early and provide corrective advice to caregivers.

Relatively more children in all three regions had their vaccination status checked, though Kagera (60.5 percent) and Mtwara (52.6 percent) performed significantly better than Kigoma (21.5 percent).

The data highlight that the assessment of feeding problems of children below two years of age is abysmal, averaging only 2 percent in the three regions. The inadequate nutritional assessment and management suggests incomplete integration of nutrition in child health services. Additional training and supervision to routinize nutritional counseling and immunization is necessary.

Among the 25 children observed at an ADDO facility, few were systematically checked for the presence of cough, diarrhea, or fever and none were checked for all three. However, five were asked about diarrhea symptoms, two were asked about cough or difficulty breathing, four were asked about blood in the stool, and two were weighed - one of whom was checked for wasting symptoms. ADDOs are not expected to routinely check vaccination status, weight, or feeding practices.

**Table 10: Checking for main symptoms, weight, and vaccination status, by health facility and region**

Indicator	Dispensaries				ADDOs N=25
	Kigoma	Kagera	Mtwara	Total	
3. Child checked for the presence of diarrhea, cough and fever	16/93 17.2%	20/104 20.6%	16/76 21.1%	52/273 19.0%	0/25
4. Child weight checked against a Road to Health chart	10/93 10.7%	45/104 43.2%	42/76 55.2%	97/273 35.5%	n/a
5. Child vaccination status checked	20/93 21.5%	63/104 60.5%	40/76 52.6%	123/273 45.1%	1/25 4%
6. Child under two years of age assessed for feeding practices	0/33	1/43 2.3%	1/19 5.2%	2/95 2.1%	2/25 8.0%

## Classification

Correct classification is determined by comparing the health worker’s reported classification with the gold standard (re-examination)<sup>19</sup>. Only one in five children in Kigoma, one in four children in Kagera and one in four children in Mtwara regions observed at the dispensary were correctly classified. This finding correlates with the low rate observed of practitioner’s questioning clients regarding the common symptoms of major childhood illnesses. The finding brings into question the results presented in Table 17, below, indicating that the majority (91 percent in Kigoma, 70 percent in Kagera, 84 percent in Mtwara) of health workers managing sick children at dispensaries on the day of the survey were trained in IMCI. Despite high reported number of IMCI-trained staff, the quality of assessment and diagnosis of children was not in accordance with standard IMCI case management algorithms.

**Table 11: Frequency of correct classification of illness in dispensaries, by region**

Indicator	Kigoma N=93	Kagera N=104	Mtwara N=76	Total N=273
7. Child is correctly classified	23/93 24.7%	23/104 22.1%	17/76 21.0%	63/273 23.1%

## Adherence to Referral Protocols

All severely ill children, i.e. those exhibiting GDS, need to be identified and referred so that they can receive appropriate care at a referral center. In Tanzania, timely referrals are often hampered by long distances to referral centers and a lack of available transportation. It is important for Tanzanian health workers first to identify health needs, second to make a referral when needed, and third to apply the algorithm “when referral is not possible.”<sup>20</sup>

Table 12 indicates very low numbers (8.5 percent overall) of referral adherence: only 2 out of 26 and 18 children with danger signs, respectively, in Kagera and Mtwara regions were referred – incredibly low numbers. Of the three children in Kigoma who were medically in need of being referred to more advanced care facilities, none were referred. This data highlights a great need for improved referral services and strengthening of community/facility networks.

Of the eight children categorized during the ADDO-based observations as needing referral to a health facility, none were referred. Appropriate referral of children exhibiting one of the danger signs is a key function of the ADDO. The majority of referral facilities (hospitals or dispensaries) were within an hour’s travel time from the ADDO.

---

<sup>19</sup> Reported gold standard disparities related to prescribed treatment which in some cases did not match the recommended treatment were noted. It is assumed that the gold standard may have prescribed other medicine because the recommended was not available. This assumption cannot be verified in the absence of matching data on availability of drugs at the specific facility where the disparities were recorded.

<sup>20</sup> “Where referral is not possible” is an additional module in the IMCI algorithm. It guides health workers on what to do with sick children who need referral but cannot comply for whatever reason and aims to ensure that the best next care is offered to prevent complications and death. Reported gold standard disparities are related to prescribed treatment and needs further investigation.

**Table 12: Referral of Sick Children, by health facility and region**

Indicator	Dispensaries				ADDOs N=8
	Kigoma N=3	Kagera N=26	Mtwara N=18	Total N=47	
8. Child needing referral is referred	0/3	2/26 7.6%	2/18 11.1%	4/47 8.5%	0/8

### Correct Treatment

IMCI aims to improve health worker prescription practices by ensuring that appropriate and adequate drugs are provided to only those children in need. Table 13 indicates treatment patterns at both dispensaries and ADDOs. Less than 30 percent of children using dispensaries were correctly treated for pneumonia. In some cases of pneumonia, injectable antibiotics were prescribed instead of those listed in the national guidelines – specifically, oral cotrimoxazole for non-severe pneumonia. Very few children (7 percent) with a severe classification were both referred and correctly treated.

High performance in correct treatment for malaria (67 percent) is in part due to availability of mRDTs in more than half of dispensaries and the availability of the correct first line antimalarial drug. However, guidelines provide for use of presumptive treatment if mRDTs are not available; therefore, in the absence of mRDTs treating fever with antimalarials in the context of this survey is considered correct treatment. Given the high rate of mRDT stock out, children with fever are more likely to be given presumptive malaria treatment.

Use of mRDTs in the diagnosis of malaria is being promoted and training has been rolled out in all three regions; however, not all dispensaries had mRDTs in stock on the day of survey. In Kigoma and Mtwara, only three out of 37 and eight out of 27 dispensaries, respectively, had mRDTs in stock. Kagera reported slightly better numbers: 15 out of 32 dispensaries had mRDTs.

Less than 10 percent of children are being correctly treated for diarrhea with Oral Rehydration Salts (ORS) and zinc. The low performance on correct treatment of diarrhea is in part due to inadequate supplies, or stock-out, of zinc at dispensaries and to the lack of diarrhea treatment corners (DTCs) for IMCI diarrhea treatment Plan B. DTCs for Plan B require that children are observed for at least four hours in the dispensary while ORS are administered by a caregiver. Additionally, it was found that antibiotics were prescribed for non-bloody diarrhea. Kigoma and Mtwara regions performed slightly better than dispensaries in Kagera with respect to treatment of dehydration with over half of children with dehydration being correctly treated

Of the 25 children observed at an ADDO, three children out of five (60 percent) with validated cases of pneumonia were correctly treated with antibiotics, but only three of seven (43 percent) malaria cases were appropriately treated with Artemisinin-Combination Therapy (ACT) (artemether and lumefantrine [ALU]). Three other presumptive cases of malaria were correctly treated by the ADDO; one child was given quinine. Only one of the four children with diarrhea was treated correctly with ORS and zinc.

Note: Although the initial research design was intended to compare service quality among the mature and new ADDOs and the DLDB, there were insufficient observations (due to lack of children brought to the ADDO by the caregiver) to compare these services. Only one observation was conducted in the new ADDO area and no observations were conducted in with the DLDB.

**Table 13: Correct Treatment of Sick Children, by facility type and region**

Indicator	Dispensaries				ADDOs
	Kigoma	Kagera	Mtwara	Sum	
9. Child with pneumonia correctly treated	4/9 44.4%	10/36 27.7%	10/36 27.7%	24/81 29.6%	3/5 60.0%
10. Child with diarrhea correctly treated with ORS and zinc	3/38 7.8%	2/37 5.4%	3/34 8.2%	8/109 7.3%	1/4 25.0%
11. Child with diarrhea and some dehydration who receive ORS at health facility	8/14 57.1%	1/3 33.3%	3/6 50.0%	12/23 52.2%	n/a
12. Child with malaria correctly treated	23/38 60.5%	20/28 71.4%	22/31 71.0%	65/97 67.0%	3/7 42.8%
13. Child with anemia correctly treated	n/a	0/4	n/a	0/4	n/a
14. Child with severe classification needing referral who receive correct treatment and referral	0/3	2/25 8.0%	2/29 6.9%	4/57 7.0%	0/3

### ***Rational Use of Drugs***

Given current drug scarcity, healthcare workers must ensure that only children who need drugs get them and to save the drugs for children in need. Over-prescription can lead to unnecessary stock outs. About a third of children in all three regions who did not require an antibiotic were given one. Rational use of antibiotics should be emphasized during supervision. One possible contributing factor is that most health workers do not use breaths per minute to differentiate between pneumonia and upper respiratory infections (URI). As a result, antibiotics are given for URI. Another inappropriate treatment observed from dispensary outpatient registers was prescription of antibiotics for non-bloody diarrhea.

The study found that about 75 percent of children left the dispensary with the correct oral antibiotic or anti-malarial yet about one third left the dispensary with an antibiotic they did not need. Drug dispensing practices were similar at the ADDO—53.8 percent left with the correct oral medicine, while 25 percent left with an unnecessary antibiotic.

We found similar results when comparing findings from this assessment to those from the TDHS 2005 and 2010 results, with respect to treatment. For treating fevers, the TDHS 2010 reported that caregivers are predominantly providing Ibuprofen, panadol, paracetamol, or acetaminophen (52 percent); other unidentified treatments (40 percent); or ALU (9 percent). The majority of children with symptoms of short and rapid breathing (cough or fever) were treated with ibuprofen-type medications (56 percent). Approximately 30 percent of caregivers do not seek care outside the home for a child with diarrhea. Over 95 percent of caregivers know about ORS and 59 percent of children with diarrhea in the previous two weeks were given either ORS or a recommended home fluid. Very few (5 percent) children were given zinc. The most alarming statistic is that 50 percent of children were given an antibiotic pill or syrup for diarrhea. Findings are consistent with the TSPA, 2006 which indicates that 4 in 5 children with URI (non-pneumonia) received antibiotics, contrary to the IMCI recommendations.

The IMCI algorithm supports rational drug use even in the absence of diagnostic capability for diarrhea and cough or short rapid breaths. Over use of antibiotics in this assessment related to non-pneumonia or non-bloody diarrhea, neither of which requires special diagnostic capability. The main issue is therefore lack of adherence to the IMCI standards.

**Table 14: Prescription of Drugs, by facility type and region**

Indicator	Dispensaries				ADDO
	Kigoma	Kagera	Mtwara	Sum	
15. Child needing an oral antibiotic and/or oral antimalarial is prescribed drug correctly	31/37 83.8%	53/79 67.1%	43/52 82.7%	127/168 75.6%	7/13 53.8%
16. Child not needing antibiotic leaves facility with antibiotic	11/32 34.3%	9/28 32.1%	10/35 28.5%	30/95 31.6%	5/20 25.0%

### *Counseling Caregivers*

Health workers should provide counseling to caregivers on the correct administration of drugs, on when caregivers should immediately return the child to a health facility, and when to provide continued feeding and extra fluids as they are important for effective treatment. Providing adequate training to caregivers will result in increased self-confidence, enhancing the likelihood that appropriate care is being provided for children when they are ill at home.

The assessment found that less than half of caregivers using the dispensaries were provided with instruction on how to administer drugs, when to return to the dispensary, or how to provide adequate nutrition. There was an exception: in the Kigoma region, it was observed that for 71 percent of children prescribed oral medications, caregivers were advised on how to administer the treatment.

All caregivers of the four children with low weight, however, were advised on feeding. About two-thirds of caregivers in all three regions knew how to administer the oral medications. FGD participants in Kigoma specifically mentioned that they would like health workers to provide improved counseling on how to administer drugs, particularly when the patient is illiterate.<sup>21</sup>

The performance of ADDOs in advising caregivers was somewhat better. Of the 23 children (of 25 observed at an ADDO) who were prescribed an oral medication, 17 (74 percent) were advised on how to administer the medication.

**Table 15: Counseling of Caretakers, by facility type and region**

Indicator	Dispensaries				ADDOs
	Kigoma	Kagera	Mtwara	SUM	
17. Child prescribed oral medication whose caretaker is advised on how to administer the treatment (based on observation of/listening to the counseling)	42/59 71.1%	43/97 44.3%	24/68 35.2%	109/224 48.7%	17/23 73.9%
18. Sick child whose caretaker is advised on when to return immediately (mentions at least 2 reasons)	24/80 30.0%	43/97 44.3%	24/68 35.2%	91/245 37.1%	1/25 4.0%
19. Child with very low weight whose caretaker receives correct counseling	n/a	3/3 100%	1/1 100%	4/4 100%	0/0
20. Caretaker of sick child is advised to give extra fluids and continue feeding	25/93 26.9%	57/104 54.8%	31/76 40.8%	113/273 41.4%	3/25 12.0%
21. Caretaker of child who is prescribed ORS, and/or oral antibiotic and/ or oral antimalarial knows how to give treatment (based on exit interview)	37/56 66.0%	53/82 64.2%	42/62 67.7%	132/200 66.0%	n/a

<sup>21</sup> According to the TDHS, 66 percent of women in rural areas are literate and 78 percent of men are literate. Rates in the 3 target regions are comparable to these national averages.

## Opportunities for Prevention Messages

Healthcare workers should use all contacts for curative services to counsel caregivers about prevention measures for the illness. Table 16 shows that overall, less than 26 percent of caregivers using dispensaries were counseled on diarrhea and malaria prevention. Kagera reported the lowest adherence where only one of 37 caregivers with children with diarrhea was counseled about water, sanitation, or hygiene/ hand washing. Of those children observed at an ADDO facility, no child with malaria was counseled on the use of an ITN for the prevention of malaria, and only two of the four children with confirmed diarrhea were counseled about household water treatment to prevent diarrhea<sup>22</sup>. These glaring omissions present great opportunities to provide adequate training under supportive supervision.

**Table 16: Counseling about preventive measures, by facility type and region**

Indicator	Dispensaries				ADDOs
	Kigoma	Kagera	Mtwara	SUM	
22a. Caregiver with child with diarrhea is counseled about water, sanitation, hygiene/ hand washing	9/38 23.7%	1/37 2.7%	5/34 14.7%	15/109 13.8%	2/4 50.0%
22b. Caregiver with child with malaria is counseled about use of ITNs	7/31 22.5%	7/36 19.4%	12/33 36.4%	26/100 26.0%	0/8

## Health Facility Support

Health facilities require well trained staff and basic infrastructure to provide quality services.

Table 17 shows the proportion of staff trained in IMCI and summarizes available infrastructure at the surveyed facilities. Research found that more than two-thirds of health workers in the survey who were managing children in Kigoma and Kagera were trained in IMCI. In Kigoma alone, as many as 91 percent interviewed had been trained; these numbers present higher coverage than the WHO recommendation that at least 60 percent of health workers managing sick children should be trained in IMCI. However, the quality of care provided does not match the proportion of providers with IMCI training, suggesting that IMCI training alone does not result in better quality of care. This is a major concern, given the high cost of IMCI training. While quality of training, including immediate follow-up after training, is important, findings from many countries implementing IMCI suggest that even well trained staff have to be appropriately supervised and supported on an on-going basis to maintain and continue to adhere to the IMCI skills. Because health workers consider IMCI to be time-consuming, they revert to short-cuts when not supervised<sup>23</sup>.

The tables below break down ADDO-related data by region. One of the objectives of this study is to compare ADDO regions (mature, new and only DLDB) in terms of services and quality of treatment. This is better demonstrated in the tables below by providing the data for each region than by summarizing the ADDO and DLDB data together, given that these data were available for all 58 facilities surveyed.

In Kigoma and Kagera, dispensaries had at least three of four essential infrastructure elements in place (consultation room allowing privacy, a latrine, improved source of water, and communication equipment). In Mtwara region, however, most health facilities lacked an improved source of water - only seven out of 27 dispensaries had safe water on site. Most facilities have communication equipment, although for most health workers, personal cell phones are the primary means of communication.

<sup>22</sup> Many ADDOs do carry water treatment products for sale, primarily PSI's WaterGuard.

<sup>23</sup> Policy Brief, June 2009: Ifakara Health Institute, Tanzania/ Consortium for Research on Equitable Health Systems



The majority of ADDOs (over 65 percent) have an improved source of water, a latrine, and communication equipment. Additionally, of those ADDOs accounted for in this study, 41 percent had a separate consulting room; 72 percent had a source of clean water; 79 percent had a telephone or radio for making contact with referral facilities (although rarely used); 66 percent had a toilet; and 72 percent had a waiting area.

For both dispensaries and ADDOs, Mtwara region is the least prepared in terms of infrastructure. This is something that planners must pay attention to as scale-up of services cannot occur without quality infrastructure.

**Table 17: Number of staff and infrastructure, by region**

Indicator	Kigoma	Kagera	Mtwara	Total
23. Dispensary staff managing sick children on the day of the survey who are trained in IMCI	40/44 90.9%	30/43 69.8%	21/25 84.0%	91/112 81.3%
24a. Dispensary has essential infrastructure (consultation room allowing visual and auditory privacy, a latrine, improved source of water, communication equipment) <sup>24</sup>	3.3	3.2	1.6	2.8
24b. ADDO has essential infrastructure (consultation room, a latrine, improved source of water, communication equipment) <sup>25</sup>	3.1	3.0	1.8	2.7

### Availability of Equipment and Materials at Health Facilities<sup>26</sup>

Health facilities also require appropriate equipment and materials to correctly assess, classify, and treat common childhood illness. Table 18 shows that availability of all following materials (weighing scales, vaccine cards and timing device for assessing cough or difficulty breathing) for child health services is very low (25 percent overall) in all regions in dispensaries.

Moreover, most dispensaries do not have equipment for DTCs (only 8 percent had the requisite equipment). This supports the finding that correct management of children with diarrhea and some dehydration in health facilities (Plan B of the IMCI chart booklet) is very low. Just over one-third of dispensaries in Kigoma and Kagera had IMCI chart booklets and mothers' counseling cards. Mtwara region had the lowest availability of these materials. Although Kagera has the lowest percentage of dispensaries with 60 percent or more staff trained in IMCI who are managing children, they have the highest (43 percent) availability of IMCI chart booklets.

With the exception of Mtwara most drug outlets had essential infrastructure. When reviewing available equipment at the ADDO, 31 percent overall had a watch or timer, and 19 percent had a stock card. Percentages of drug shops having both ranged from a low 6 percent in Kigoma to 44 percent in Mtwara.

**Table 18: Availability of equipment and materials at health facility, by region**

Indicator	Kigoma N=37	Kagera N=32	Mtwara N=27	Total N=96
25a. Dispensary has the following required equipment to support basic child health services	11/37 29.7%	13/32 40.6%	2/27 7.4%	24/96 25.0%

<sup>24</sup> Calculated out of the 4 items listed.

<sup>25</sup> Calculated out of the 4 items listed.

<sup>26</sup> Note: ADDOs are not expected to have the same equipment as a dispensary.

(accessible and working child weighing scale, timing device for diagnosis of pneumonia, vaccination cards)				
25b. ADDO has the equipment to support basic child health services (timing device)	4/32 12.5%	5/7 71.4%	9/19 47.3%	18/58 31.0%
26a. Dispensary has the equipment and supplies to support functioning DTC (measuring/mixing jar, cup, spoon and sitting area)	3/37 8.1%	2/32 6.3%	3/27 11.1%	8/96 8.3%
26b. Dispensary has IMCI chart booklet and mothers counseling cards	14/37 37.8%	14/32 43.8%	6/27 22.2%	34/96 35.4%

### Availability of Essential Drugs

To ensure for effective case management, it is essential that all the recommended first line drugs are available in the health facilities. Table 19 shows that most dispensaries and drug shops in all regions had at least five to six out of the nine recommended first line oral medications. Zinc and antibiotics were out of stock at many dispensaries assessed in both Kigoma and Kagera regions, and just over half of the dispensaries were out of stock of ORS on the day of the survey. While availability of zinc is very low in dispensaries, it is much better stocked in ADDOs and DLDB. ORS is almost universally available in both types of duka la dawa. Although the availability of ORS and zinc seems relatively low in the table (which counts only those that had both in stock), 90 percent of the drug shops had ORS in stock and 60 percent had zinc.

Eighty percent of both dispensaries and ADDOs in Kigoma stocked the appropriate antibiotics for pneumonia, but only half of dispensaries in Kagera and Mtwara were stocked. The assessment found that availability of the first line antimalarial is very good in Kigoma and Kagera dispensaries (79 percent and 78 percent, respectively), and in Kigoma ADDOs (84 percent), but somewhat lower in Mtwara dispensaries and ADDOs (63 percent and 74 percent, respectively). ADDOs now have access to subsidized ACTs through the Global Fund's AmFm facility at low cost. Index of available injectable or pre-referral drugs ranged between two and three out of four at the dispensaries.

Recently conducted end-use verification of quarterly drug availability in facilities and at zonal warehouses confirms the ongoing challenges of availability of drugs.<sup>27</sup> Results show that in Q1 46 percent of health facilities (dispensary, health center, and district hospital) were out of stock of ACT for 3 days or more during the last 3 months preceding the visit and 50 percent and 56 percent were out of stock of amoxicillin and cotrimoxazole suspension, respectively. To assure quality services, all recommended drugs need to be available 100 percent of the time. Without drugs, quality of care is compromised, and caregivers lose confidence in the system.

During IDIs, caregivers' highest recommended action was to improve services at the dispensary, specifically identifying the need to improve the availability of drugs (80 percent in Kigoma and about 50 percent in both Kagera and Mtwara). More than two thirds of IDI respondents said that drugs are usually out of stock. While drug supply from the Medical Stores Department has generally improved, as reported by the Council Health Management Teams, drug supplies are quickly depleted, and they are out of stock for long periods of time (roughly two weeks to a month each quarter). It was reported that this occurs primarily with antibiotics and to a lesser extent, anti-malarial drugs.

<sup>27</sup> Note: Only Kigoma region is part of the EUV in this quarterly report; The Tanzania End-Use Verification Survey (EUV) Quarterly Results: February 2012 report (USAID/JSI DELIVER project)

When drugs are out of stock at the dispensary, caregivers reported that they rely on ADDOs for drugs. Caregivers reported that they primarily go to ADDOs to obtain drugs (ranging from 55 percent in Kagera to 86 percent in Mtwara). The biggest barrier to purchasing drugs from the ADDOs, when out of stock at the dispensaries, is limited financial resources. All 1,511 caregivers who participated in the survey were asked what families do when they cannot afford medicines. In all regions, borrowing money was the most common response (58 percent), followed by other (15 percent), or looking elsewhere to find a cheaper product (14 percent). Only 10 percent said that most families can afford drugs from the ADDOs. Surprisingly, TDHS reported (nationally) that by 2010, getting money was not listed as a problem by 56 percent of respondents,<sup>28</sup> was listed as a big problem by 25 percent (down from 45 percent in 2005) and stated it was only a small problem for 18 percent of respondents (down from 55 percent in 2005). However, these findings do not seem to be consistent with the findings on affordability of medicines in the three regions in this survey. The ADDO owners complained of unpaid credits on medicines which in turn affects their business turnover.

The extended family system seems to be the most common means of extra support for cash to either buy drugs or pay for transport to the next level of care. Based on the narratives, single female parents, less educated parents, and those without an extended family have the greatest challenges accessing care. A single mother in Kigoma spoke about how she depends on her father for support when she needs money to buy drugs. Another divorced, single mother reported that she depends on the brother of her ex-husband for support. Insight from narratives, mostly young mothers, suggests that those who are educated enough have moved on to the urban areas to seek better opportunities while the less educated are mostly stuck with limited opportunities in villages. Most young mothers interviewed dropped out of school either because they had no money to continue with school or due to pregnancies.

**Table 19: Drug availability in dispensaries and ADDO or DLDB on the day of the survey, by region**

Indicator	Kigoma	Kagera	Mtwara	Sum
27a. Index of availability of essential oral treatments (out of 9) at dispensaries. Essential oral drugs for home treatment of sick children present the day of visit (ORS, zinc, vitamin A, iron, mebendazole, paracetamol/aspirin, national recommended first line drug for pneumonia- cotrimoxazole, ALU and Nalidixic)	5.7	5.8	5.8	5.8
27b. Index of availability of essential oral treatments at ADDO	5.8	5.4	5.6	5.7
28a. Availability of first line diarrhea treatments (ORS and zinc) at dispensaries	5/37 13.5%	3/32 9.4%	7/27 25.9%	15/96 15.6%
28b. Availability of first line diarrhea treatments (ORS and zinc) at ADDO	20/32 62.5%	3/7 42.9%	11/19 57.9%	34/58 58.6%
29a. Availability of first line pneumonia medications (co-trimoxazole) at dispensaries	32/37 86.5%	15/32 46.9%	17/27 63.0%	64/96 66.7%
29b. Availability of first line pneumonia medications (co-trimoxazole) at ADDO	26/32 81.3%	4/7 57.1%	13/19 68.4%	43/58 74.1%
30a. Availability of first line anti-malarials (ALU) at dispensaries	29/37 78.4%	28/37 75.7%	17/27 63.0%	74/101 73.3%
30b. Availability of first line anti-malarials at ADDO	27/32 84.4%	5/7 71.4%	14/19 73.7%	46/58 79.3%
31a. Index of availability of injectable drugs (out of 4)	2.1	2.6	3	

<sup>28</sup> The responses to this question were different in 2005 and 2010. In 2005 the responses were big problem/small problem. In 2010, the responses were no problem/big problem/not a big problem.

Indicator	Kigoma	Kagera	Mtwara	Sum
for pre-referral treatment at dispensaries. Injectable antibiotics and antimalarials for pre-referral treatment of sick children and young infants that are available in each facility the day of visit (quinine, gentamicine, benzylpen and recommended IV fluid)				2.5
31b. Index of availability of injectable drugs at ADDO (the ADDO is not allowed to perform injections)	0.7	0.3	2.8	1.3

### Treatments Available at ADDOs and DLDB

TFDA provided a list of drugs for child health which are approved for sale by ADDOs. The complete list of these drugs and the percentage of facilities in each district which have the drugs in stock may be found in Annex II.

Few respondents mentioned going to a drug shop for only advice or for both advice and drugs. The majority of respondents reported that they were able to obtain drugs from both ADDOs and DLDB without a formal prescription.

Few caregivers reported concerns about the quality of drugs provided through the ADDOs, ranging from 14 percent in Kigoma to 18 percent in Mtwara. The exorbitant price of drugs featured more prominently as concerns in their interviews, ranging from 88 percent in Kigoma to 69 percent in Mtwara. Drug stock outs also seemed to be an issue. Approximately half of caregivers in each of the regions said that drugs were available, and the other half said they had to seek them from other sources. This is true for ADDOs as well as DLDBs.

Correspondingly, major suggestions for improving services focused on lowering prices (60-73 percent) and having a better stock of medicines (14-21 percent). Participants were asked what action they took when drugs were not available at the ADDO. The following table illustrates their range of replies—which primarily focused on using a substitute drug.

**Table 20: Caregiver actions when drugs are not available at the ADDO, by region**

Action	Kigoma (N=73)	Kagera (N=20)	Mtwara (N=55)	Total
Go without	6/73 8.2%	4/20 20.0%	7/55 12.7%	17/148 11.5%
Use substitute drug	20/73 27.4%	9/20 45.0%	22/55 40.0%	51/148 34.5%
Use home treatment	6/73 8.2%	3/20 15.0%	7/55 12.7%	16/148 10.8%
Try another ADDO	19/73 26.0%	1/20 5.0%	9/55 16.4%	29/148 19.6%
Go to hospital	7/73 9.6%	n/a	n/a	7/73 9.6%
Go to a private dispensary	1/73 1.4%	n/a	n/a	1/73 1.4%

ADDOs obtain their drugs and other supplies from wholesalers (93 percent) or private manufacturers (one in Kasulu district and two DLDB in Muleba district). As such, availability of drugs at ADDOs (unlike

dispensaries that depend on distribution by Medical Stores Department) is largely influenced by liquidity or cash flow.

### Vaccination services

Vaccination is a key preventive intervention for childhood illness, particularly pneumonia and measles. In line with encouraging “no missed opportunity” for every child, vaccinations are provided during a visit for curative care provided the child has no severe classification. Unlike in the past, fever associated with common illnesses is not a contra-indication for vaccination.

**Table 21: Child receives needed vaccination at dispensary, by region**

Indicator	Kigoma N=8	Kagera N=28	Mtwara N=10	Total N=46
34. Child needing vaccination leaves facility with all needed vaccinations	5/8 62.5%	3/28 10.7%	1/10 10.0%	9/46 19.6%

Overall, fewer than 20 percent of children needing a vaccination from the dispensary received one during the visit. Of those reported, Kigoma region had the highest, five out of eight children (62.5 percent) needing a vaccination actually receiving it before leaving the facilities. In Kagera and Mtwara regions, only three out of 28 and one out of 10 children respectively received vaccinations. The possible explanation is that dispensaries have set days for routine vaccinations and would not open new vials if they do not have enough children on a “non-vaccination” day. While the IMCI standard teaches health workers to offer vaccinations to every child who is due for a dose, for practical reasons, districts and dispensaries have devised their own systems either to deal with staffing or vaccine stock out issues. This finding, particularly in reference to the Kagera region, needs further investigation. Looking at the system put in place by dispensary staff to ensure that such children do not miss out completely may provide insights into vaccine services. ADDOs do not provide vaccinations.

### Vaccine Availability

The assessment looked at dispensaries for availability of vaccines on the day of the survey. On average, 60 percent of dispensaries in all regions had the necessary equipment and supplies to support full vaccination with Kigoma region being somewhat lower at 54 percent. Vaccine availability was relatively strong with Mtwara regions having all five vaccines in stock while Kigoma and Kagera had four out of five in stock at the time the research was conducted. The BCG, OPV, and DPT vaccines are most likely to be out of stock in all the three regions. Given that vaccines were available at the time of the survey, all eligible children should have received the antigens.

**Table 22: Vaccine availability on the day of the survey at dispensaries, by region**

Indicator	Kigoma	Kagera	Mtwara	Total
35. Dispensary has the equipment and supplies to support full vaccination services	20/37 54.1%	22/32 68.8%	17/27 63.0%	59/96 61.5%
36. Index of availability of five vaccines. Mean of five recommended antigens available at each facility the day of visit. (BCG, Polio [OPV], DPT, measles, and Hib)	4	3.9	5	4.2

### Drug Management at Dispensary and ADDO

While drug availability is repeatedly stated as a concern of caregivers, drugs management, including storage conditions and expiry, are important factors in maintaining their potency. We assessed

dispensaries and ADDOs on the use of the First In, First Out (FIFO) principle to help early detection of drugs nearing expiry and ensuring that all children only receive potent drugs.

Table 23 shows that in Kigoma and Mtwara regions, less than half (43 and 37 percent, respectively) of dispensaries are using FIFO to manage drugs. In Kagera region, dispensaries performed better with 56 percent using FIFO. While most drugs run out quickly in general, not using FIFO increases the risk of slow moving drugs expiring on the shelves.

59 percent of ADDO facilities used a FIFO stock management system. Results were better in Kigoma and Kagera than in Mtwara. Most ADDOs display their products in open or glass enclosed shelves in shaded rooms so drugs are not exposed to sunlight.

**Table 23: Drug Management at Dispensary and ADDO, by region**

Indicator	Kigoma N=37	Kagera N=32	Mtwara N=27	Total N=96
37a. Dispensaries using FIFO stock management system	16/37 43.2%	18/32 56.3%	10/27 37.0%	44/96 45.8%
37b. ADDOs using FIFO stock management system <sup>29</sup>	22/32 68.6%	4/7 57.1%	8/19 42.1%	34/58 58.6%

### Staff Skills and Supportive Supervision

Quality of care is affected by the lack of skills of the health workers. While training provides some initial skills, supportive supervision is an important tool for re-enforcing technical skills, correcting errors/inappropriate practices, and encouraging positive attitudes towards patients. Supportive supervision also helps to maintain staff morale and therefore performance at a high standard.

**Table 24: Staff Skills and Supportive Supervision**

Indicator	Kigoma	Kagera	Mtwara	Total
32a. Dispensaries with at least 60% of workers managing children trained in IMCI <sup>30</sup>	26/37 70.3%	8/32 25.0%	8/27 29.6%	42/96 43.8%
32b. ADDO has at least one trained dispenser	25/32 78.1%	0/7	17/19 89.5%	42/58 72.4%
33a. Dispensary received at least one supervision visit that included observation of case management (or review of case management records) during previous six months	21/37 56.8%	20/32 62.5%	15/27 55.6%	56/96 58.3%
33b. ADDO had at least one supervisory/regulatory visit	31/32 96.9%	2/7 28.6% <sup>*31</sup>	6/19 31.6%	39/58 67.2%

The Tanzania MoHSW adopted IMCI in 1996 and health workers are being trained on a continuous basis with the goal to cover at least 60 percent of health workers managing sick children in each dispensary by

<sup>29</sup> These results are affected by interviewer error in Newala district (Mtwara) where this section was skipped and listed as ‘non-applicable.’

<sup>30</sup> This indicator reports “assigned staff” most of whom may not be at the facility for prolonged periods of time and is therefore not a good measure of skills of available staff.

<sup>31</sup> Supervisory visits were not expected in Kagera because the DLDB have not yet been trained and transformed into ADDOs.

2012. Kigoma region has the highest, 70 percent of dispensaries meeting the standard, followed by Mtwara at 30 percent, whereas Kagera has the lowest at only 25 percent. However, IMCI training was very high for health workers managing sick children on the day of the survey (see Table 2 above). A workforce management problem commonly observed was the absence of professional health workers from dispensaries for prolonged periods of time and that during these times, non-professional medical attendants assumed all case management responsibilities. In all three regions, about 60 percent of dispensaries reported that they had supportive supervision that included case management observation. This finding is however surprising given the low performance of health workers in correct assessment, classification, and treatment of childhood illnesses. Besides the possibility of problems with quality of training provided, this suggests a lack of technical support and skills enforcement by supervisors within facilities. It is also possible that supervisors are not trained in IMCI or appropriate supervisory skills and cannot therefore enforce the right skills. There is general lack of accountability for adhering to IMCI standards.

In Kigoma and Mtwara regions, where ADDO training was completed, the majority of ADDOs had at least one trained staff member (78 percent in Kigoma and 89 percent in Mtwara). Surprisingly, 67 percent of the ADDOs surveyed reported that they had had a “supervisory” visit within the past six months. This was especially true in the Kigoma region where 97 percent of the ADDOs reported a supervisory visit. However, we concluded that the respondents were probably confusing a supervisory visit with a facility inspection visit prior to accreditation. Only 16 percent of the ADDOs reported providing monthly reports to the District Health Officer; the majority of these were in the Newala district of Mtwara, the mature ADDO area. Only 7 percent reported providing quarterly reports to the District Health Officer, mostly those in the Nanyumba district of Mtwara region. Only five of the 19 ADDOs in Mtwara (28 percent) had an ADDO referral book. Only two were able to show an ADDO register, both of whom had completed the required information.

### **Community Health Insurance**

The topic of health insurance was included in the FGDs. Participants presented both positive and negative perceptions of health insurance. Respondents stated that they were aware of health insurance but did not completely understand it. (Note: Tanzanians can get health insurance for a low price which provides coverage for access to health services, however, the community insurance fund does not cover drugs and many drugs are costly.) Because the insurance fund is not used to purchase drugs at the ADDO, it is of doubtful value to caregivers and may in fact be a major factor explaining the low levels of people buying health insurance.

### **Opinions about VHWs**

Respondents stated they have positive perceptions of VHWs who provide community with information and mobilization services, stating that they assist providers at facilities, are committed to their job, and are hard working. VHWs are likewise appreciated for their ability to go house-to-house advising families about health matters. Better training and access to transportation would enable them to provide more professional and reliable services.

## Summary and Discussion of Findings

### What do the results tell us about the dispensaries and ADDOs as first line sources of care for childhood illnesses in rural communities in Tanzania?

#### *Access to services*

Access to health services can be measured in terms of geographical access which commonly uses a given distance to a health facility. Beyond physical availability, access is measured in terms of hours of operation, utilization, and acceptability of services and is dependent on the affordability. Thus, availability of services and barriers to access have to be considered in the context of the differing perspectives, health needs, and material and cultural settings of diverse groups in Tanzania in general and the three regions studied in particular.

**Physical access:** While this study did not quantify the proportion of the population living beyond five and 10 kilometers from a dispensary or ADDO, long distance to health facilities is a barrier to access in Tanzania. In both TDHS 2005 and 2010, distance to access services was reported as a problem by about 45 percent of the respondents. This is supported by the fact that current coverage of dispensaries is below 50 percent of the target of the PHSDP MMAM. Therefore, it can be inferred that there are communities not being well served by current dispensaries due to long travel distances. The Tanzania Human Rights Report of 2010 indicates that most communities have limited access to dispensaries; in Mtwara for example, only 34 of expected 155 dispensaries (22 percent) are in place.

**Convenience of hours:** Because illness or the decision to seek care cannot be controlled, curative services should be available on a 24 hour basis to guarantee timely access. We found that 60-75 percent of dispensaries provide 24 hour access. Most ADDOs are open 18 hours per day. Although the caregivers surveyed did not raise this as a significant issue, there is scope for improvement to ensure 24 hour access to trained health workers in all dispensaries.

**Financial barriers:** Beyond physical availability, utilization of effective treatments is dependent on the financial affordability. Rural communities are particularly vulnerable to this barrier because, often, they lack cash. The policy to remove user fees on services for under-five children has increased access. However, the irregular availability of drugs at dispensaries and the need to fall back on the ADDO have created a major barrier for those without regular access to cash resulting in delays in using effective treatments. Some coping mechanisms which are common yet ineffective include: borrowing funds from extended family, providing day labor to earn cash, delaying care hoping that the illness will resolve itself.

**Availability of drugs and trained staff:** Drugs, basic lab tests, and the appropriately skilled staff combine to offer an effective health service. When key drugs for the most common ailments are frequently not available at the dispensary, timely treatment is not guaranteed. When the staff lacks the right skills, not only do they make incorrect classifications, but they may also overuse available drugs causing stock outs and making them unavailable for the next client. As treatment is improved with basic diagnostics such as mRDTs, inappropriate dispensing of medicines and the cost of treatment can be contained.

Although the ADDO provides an essential “backup” source of drugs, given that it is better stocked with essential medicines for childhood illnesses, the out-of-pocket cost of medicines makes treatment inaccessible for many rural families. For the remotest and poorest communities with limited access to funds, the ADDO system is, for all practical purposes, out-of-reach, as the cost of drugs increase to cover



additional transportation costs the further the ADDO is from an urban area where the wholesalers are located. ADDO owners often locate their shops near the dispensaries partly because this is where the population is concentrated but also because ADDO owners are often employees at government health facilities and ADDOs dispense primarily on the basis of prescriptions from nearby facilities. *In essence, the ADDO program is not meeting its objective of reaching 80 percent of the rural, peri-urban, or other underserved populations.*

## ***Quality of Care***

Quality of care is an important variable in determining access and appropriateness of care. IMCI has been adopted by many countries as a strategy for improving the quality of case management of childhood illness. However, even when trained in IMCI, many health workers do not follow the national standards for assessment, classification, and treatment of the common symptoms (cough/difficulty breathing, fever, and diarrhea) of the leading causes of child deaths in Tanzania<sup>32</sup>. There is also a significant lack of feedback mechanisms between levels of care.

Supportive supervision involving case management observation and immediate supportive feedback has been found to be effective in enforcing IMCI skills. It also appears that there is more required to motivate staff to follow the algorithm because in this assessment, training and even reported high levels of supervision does not automatically lead to correct case management. In Benin, training in IMCI was found to be an insufficient condition for maintaining IMCI clinical skills. However, when well supervised, the same study found no decline in adherence to IMCI skills over three years.<sup>33</sup> This suggests that the quality of reported supervision in our study may be poor. At the same time, findings suggest that staff trained in IMCI do little to convert the facility into an “IMCI implementing facility” contrary to the assumption made at national level about how much influence staff trained in IMCI can exert on facility staff who are not yet IMCI- trained. In reality, even when trained staff do a short debriefing meeting, those not trained are not interested in the details, preferring to go for the full training and receive per diem<sup>34</sup>.

Besides training, availability of equipment and supplies is important. For example, the lack of DTCs in dispensaries makes correct management of “diarrhea with some dehydration” impossible. This contradicts the report that DTCs have been revitalized in most health facilities.<sup>35</sup> In most cases, ADDOs were two to three times more likely to provide the correct drug. This is probably due to the fact that they generally have a better stock of first line treatments, including zinc.

IMCI implementation needs to be reviewed including an evaluation of quality of both in-service and pre-service training. A number of recent nurse and assistant clinical officer graduates in Mtwara rural reported that IMCI was mentioned during their pre- training but there was little time spent on teaching and practicing IMCI skills. Tanzania has adopted ICATT (IMCI Computerized Adaptation and Training Tool), but one of its limitations is the lack of opportunity for clinical practice which suggests that it may

---

<sup>32</sup> According to Countdown to 2015, Maternal, Newborn and Child Survival data, 2012, the major causes of under-five child deaths in Tanzania in 2010 were neonatal (36%), pneumonia (13%), malaria (11%), and diarrhea (8%).

<sup>33</sup> Trends in health worker performance after implementing the Integrated Management of Childhood Illness strategy in Benin: Rowe AK, Osterholt DM, Kouamé J, Piercefield E, Herman KM, Onikpo F, Lama M, Deming MS.

<sup>34</sup> Prosper H and Borghi J (2009). IMCI Implementation in Tanzania: Experiences, Challenges and Lessons. Presented to DFID by the Ifakara Health Institute, Tanzania.

<sup>35</sup> Scale-up strategy for essential medicines for child health diarrhea, malaria and pneumonia, 2012-2015, MoHSW. November, 2011.

make skills acquisition a bigger problem. ICATT should be subjected to rigorous implementation and monitoring on an initial scale, beyond WHO supported pilot testing, before it can be scaled up.

## Conclusions

- Tanzania has a relatively strong health system in terms of infrastructure, policies, and standard operational procedures for packages of services at community level. Greater attention needs to be focused on implementation of these policies to assure that the system functions according to set standards. *For services offered at dispensaries, the main issues identified by the data gathered during this assessment that will change access to and use of case management services are: following policies already in place, improving availability of essential first line drugs and increasing the number of staff available to provide services.*
- Dispensaries provide the full range of clinical case management services to children under five for the common childhood illnesses and are the location of choice for the majority of caregivers seeking treatment of sick children in all wealth quintiles. However, quality of services is not up to established standards at dispensaries. Dispensary staff are not following IMCI protocols and instead, prescribe a cocktail of treatments—not all of which are necessary. These poor prescribing practices significantly increase drug budgets and exacerbate the stock outs of essential medicines. *Improving health worker practices can in fact save drugs in the long run* as will, the use of rapid diagnostic tests in confirming presence of malaria.
- At dispensaries, access to and provision of case management for childhood illness will improve if essential first line drugs and competent staff are available. Given the reported absence of clinical officers on top of the general human resource shortage in Tanzania, and the complaint from IDIs about long waiting times, it can be concluded that poor availability of trained staff contributes to low quality of care. *Increasing the number of skilled staff available to provide services would reduce waiting times to receive care as well as allowing health workers to not be in ‘hurry’ while assessing and treating children.* These changes will build caregivers’ confidence in the treatment and advice they receive from healthcare workers and encourage them to use health services more often. It is also hoped that community promoters can convince caregivers to seek care earlier rather than as a last resort.
- ADDOs are trained in basic IMCI protocols and they are to ask questions about symptoms, to categorize symptoms by simple or severe, to recognize danger signs, and to provide an initial treatment and then refer the patient to a health facility. They are to provide quality prescription-only drugs to clients who have a prescription in hand. They do not have clinical training and are not expected to diagnose or substitute for the clinical services provided by the dispensary. The assessment team found that the *ADDOs are serving a vital role as a backup to the dispensary in making drugs available when the dispensary is out of stock but are not counseling caregivers and checking their understanding of how to administer drugs to sick children.*
- In spite of the original program design that was to ensure that ADDOs were established in rural areas and providing treatments in areas underserved by public dispensaries, the majority of ADDOs are located in peri-urban or urban areas. From a business perspective the ADDO owner needs a catchment area with sufficient population and cash in circulation to ensure that the business can survive. Moreover, the further away from urban centers and wholesale sources of

drugs, the higher the cost of treatment to the rural consumer due to higher transportation costs of drugs and medical products, and the less likely the client base will have cash readily available to pay for treatments. *There is a need to revisit the design assumptions of the ADDO system* in view of the finding that they are not located in underserved rural areas and do not serve as an additional point of treatment for the remotest or poorest populations. The ADDO could play a much stronger role in the delivery of care in rural areas if better incentives are provided for establishing themselves in underserved areas.

- For ADDOs, while the design is a self-sustaining private business, for quality to be improved and maintained, there must be incentives for good performance and adherence to set standards of care. *Financial options such as access to subsidized drugs, arrangements for pooled procurements, or coverage of the cost of medicine for participating member of the community health insurance schemes should be explored.* A more private sector structure for supportive supervision (peer supervision/mentoring through ADDO associations) might be more sustainable and effective for the ADDOs. There has been some discussion between Management Sciences for Health and TDFA about the Pharmacy Council taking over the supportive supervision role while the district (GoT) pharmacists would continue to provide regulatory oversight, although we understand that there are human resource constraints on that front currently.
- The DHS 2010 reports somewhat poorer care seeking rates for diarrhea (51 percent), and fever/malaria (61 percent), particularly in rural areas. Furthermore, and confirmed by this and other studies (TSPA, 2006), not all care seeking results in correct treatment of the ailment. The current issues limiting access should be discussed in the context of what corrective measures are feasible and affordable. The measures should focus not only on increasing access to care for those who are underserved, but also on improving the quality of care, so that treatment outcomes improve for those who are already seeking care. The latter has the potential to further increase care seeking when caregivers experience the benefits of prompt and correct treatment. Whatever choices are made, mechanisms have to be in place to ensure that health workers (professional and CHWs) are appropriately skilled, motivated and retained, supervised and supported and that drugs and other commodities critical to providing quality services are made available on a regular basis.

## Recommendations

On November 6, 2012, stakeholders gathered in a workshop to review the results of this study. These included representatives from the Ministry of Health and Social Welfare, Reproductive and Child Health Division; the Tanzania Food and Drug Administration, USAID, WHO, UNICEF, the Clinton Health Access Initiative, Abt Associates and Population Services International. Participants discussed the findings and then met in smaller groups to make recommendations within the logical framework for reducing morbidity and mortality of children under five for improving appropriate case management of childhood illness in four areas: Improving quality of care, improving supply of treatments, increasing user access and increasing informed demand.

The study findings can best be summarized under the following scenarios that need to be addressed in the recommendations. These are 1) quality of services and 2) access with two subsets: areas where there are only dispensaries and hard-to-reach areas where there is poor access to both dispensaries and ADDOs.

The first scenario involves the need to improve quality of available services while the second involves the need to expand access either to dispensaries or both dispensaries and ADDOs or through community based treatment services.

The recommendations of stakeholders participating in the meeting are as follows:

### **Improving Quality of Care where services are available:**

Short term:

- Conduct analysis of why the current supervision arrangement is not working. Conduct assessments with supervisors who know how to manage sick children. Provide incentives associated with improved supervision by district teams.
- Improve supervision by supplying supervisors with simplified Health Facility Assessment (HFA) tools to assess providers' skills and knowledge.
- Assure that all dispensaries have the required basic equipment and that it is maintained in good working order

Longer term:

- Improve supervision by implementing a management information system that allows for monitoring of each provider attending children and assuring that the provider gets frequent feedback on performance. The accumulated data of individual observations should provide a “picture of quality” of the district or geographical/supervisory area. Benchmarking is required to know trends over time to see if the supervisory activities are working or not.
- Increase the number of supervisors, provide supervisors with skills in coaching and mentoring, widen the scope of supervision to include ADDOS and community health workers;
- Increase confidence in referrals: consider providing transportation vouchers for referral related transportation costs;
- Improve competencies : assure that acquisition of appropriate IMCI skills is emphasized and tested during pre-service training and that in-service IMCI training is expanded and made available through the new computerized ICATT curriculum;
- Improve service delivery by assuring that all staff who assess or manage sick children have and use the requisite IMCI skills.
- Include [or emphasize] accountability in health system governance especially linking quality of care to health facility and DHMT performance.

### **Improving Access to Supplies and Improving the Supply Chain**

Short term:

- Establish a working group that links the distribution of a minimum of commodities (pneumonia antibiotics, ORS, Zinc, ACTs/RDTs) utilizing the EPI supply chain.

Longer term:

Within the public sector dispensaries:

- Advocate with both national and district level health management personnel for adequate budget to prioritize procurement of child health drugs and assure availability of drugs and supplies;
- Address the policy environment by reviewing procurement procedures, specifically prioritizing childhood illness treatments and supplies and assuring that there is a local/district mechanism to procure commodities;
- Assure that there are adequate numbers of trained pharmacy personnel and procurement staff at each facility;
- Assure that the district supervisory team is routinely monitoring and managing drug, supply and recordkeeping/reporting systems at each facility; and
- Improve forecasting/quantification through integration with existing programs, e.g. SCMS for HIV, ILS Gateway for malaria and essential drugs, SMS for Life for malaria and ensuring staff have skills and time for managing drugs and supplies
- Fast track finalization of the Essential Medicines Initiative strategy

Within the private sector ADDO program:

- Organize ADDOs into associations and link them with a franchise or organized wholesale system so they can improve their pricing structure and lower costs to consumers. ADDOs need access to pooled procurement options, access to savings and credit, and access to microfinance institutions;
- Where ADDOs provide backup services for drugs, MOHSW should consider subsidizing the costs of essential childhood medicines for ADDOs so they can pass on these cost savings to the poor; and
- In areas where there are no dispensaries or ADDOs, consider “testing” an iCCM-based community-based distribution system in Tanzania; however, this must be done within a system that identifies sources of finance and assures adequacy of supervisory systems.

### **Improving Access to Services**

Short-term actions:

- Reduce the number of trainings that take health providers away from the facility;
- Reduce the role of health providers in administrative tasks so that they can provide better case management-related services;
- Provide a voucher/insurance scheme for the rural poor; and
- Prioritize the use of community health funds and/or other private initiatives to supplement child health drugs at the dispensary level when the facility is out of stock of essential medicines. This would require financial and control systems to assure quality and equity.

Longer term actions:

- Increase the capacity of health care workers at the existing facilities to deal with basic referral services to keep care closer to the community,
- Accelerate expansion of the ADDOs network and include incentives to sustain their operations where business is not “lucrative” or attractive.
- Strengthen the referral system and transportation links to assure that the sick child can get to higher level facilities; and
- Develop a policy to allow alternative providers including: community health workers to be trained to provide both promotion and curative roles at the village level in hard-to-reach areas in order to bring the treatment to the child either through government, ADDO or NGOs. This should be tested in pilot communities without access to dispensary services.

### **Improving Demand for Services**

Short-term actions:

- Use community structures (village health workers, women’s groups) to identify children at risk who are not accessing services and refer them to services already available.

Longer-term actions:

- Develop a national approach for community health promotion,
- Strengthen the skills of community health workers in the 16 key practices so that they can provide essential outreach in the community, and
- Enhance understanding in the community that ADDOS can assess danger signs in key illnesses and provide appropriate treatments.

***Annex I: Summary of Indicators***

Summary of Indicators for Service Quality, Supervision and Drug Availability

(see excel document)

## Annex II: TFDA List of Drugs at ADDOs

Tanzania Food and Drug Authority List of Drugs Available at ADDOs

DRUG AVAILABILITY @ ADDO	Kasulu District		Kigoma rural Distr		Kigoma Region		Muleba distr/Kagera Reg		Newala District		Nanyumba District		Mtwara Region		3 region summary	
ORS (low osmolarity)	15	83.3%	13	92.9%	28	87.5%	7	100.0%	8	80.0%	9	100.0%	17	94.4%	52	89.7%
Zinc	14	77.8%	8	57.1%	22	68.8%	3	42.9%	4	40.0%	6	66.7%	10	55.6%	35	60.3%
Cotrimoxazole	16	88.9%	10	71.4%	26	81.3%	4	57.1%	6	60.0%	7	77.8%	13	72.2%	43	74.1%
Amoxicillin	15	83.3%	11	78.6%	26	81.3%	4	57.1%	8	80.0%	7	77.8%	15	83.3%	45	77.6%
Procaine Penicillin	5	27.8%	7	50.0%	12	37.5%	3	42.9%	3	30.0%	6	66.7%	9	50.0%	24	41.4%
Dysentery (cotrimoxazole)	12	66.7%	12	85.7%	24	75.0%	4	57.1%	6	60.0%	8	88.9%	14	77.8%	42	72.4%
Dysentery (Nalidixic acid)	5	27.8%	3	21.4%	8	25.0%	1	14.3%	0	0.0%	2	22.2%	2	11.1%	11	19.0%
Metronidazole	6	33.3%	9	64.3%	15	46.9%	3	42.9%	5	50.0%	7	77.8%	12	66.7%	30	51.7%
ACT /Alu	15	83.3%	12	85.7%	27	84.4%	5	71.4%	6	60.0%	8	88.9%	14	77.8%	46	79.3%
Vitamin A	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	22.2%	2	11.1%	2	3.4%
Iron/ferrous sulfate	1	5.6%	2	14.3%	3	9.4%	3	42.9%	1	10.0%	2	22.2%	3	16.7%	9	15.5%
Paracetamol/aspirin	17	94.4%	12	85.7%	29	90.6%	5	71.4%	8	80.0%	9	100.0%	17	94.4%	51	87.9%
Mebendazole	16	88.9%	12	85.7%	28	87.5%	7	100.0%	8	80.0%	8	88.9%	16	88.9%	51	87.9%
Tetracycline eye ointment	10	55.6%	8	57.1%	18	56.3%	4	57.1%	5	50.0%	6	66.7%	11	61.1%	33	56.9%
Gentian violet	6	33.3%	4	28.6%	10	31.3%	1	14.3%	7	70.0%	7	77.8%	14	77.8%	25	43.1%
intramuscular antibiotic	0	0.0%	1	7.1%	1	3.1%	0	0.0%	0	0.0%	4	44.4%	4	22.2%	5	8.6%
quinine	0	0.0%	7	50.0%	7	21.9%	1	14.3%	7	70.0%	8	88.9%	15	83.3%	23	39.7%
benzyl penicillin	0	0.0%	5	35.7%	5	15.6%	0	0.0%	5	50.0%	9	100.0%	14	77.8%	19	32.8%
Gentamycin IM	1	5.6%	4	28.6%	5	15.6%	0	0.0%	4	40.0%	9	100.0%	13	72.2%	18	31.0%
Sterile water for injection	3	16.7%	6	42.9%	9	28.1%	1	14.3%	6	60.0%	9	100.0%	15	83.3%	25	43.1%
IV fluid for severe dehydration	1	5.6%	5	35.7%	6	18.8%	1	14.3%	5	50.0%	6	66.7%	11	61.1%	18	31.0%