Accredited Drug Dispensing Outlet Program District Reporting for the Child Health Component: Experience from Ruvuma and Morogoro Region (July 2007–August 2009)

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CONTENTS

ACRONYMS

ADDO	accredited drug dispensing outlet
ALu	artemether-lumefantrine
CHMT	Community Health Management Team
DLDM	duka la dawa muhimu
IMCI	Intergrated Management of Childhood Illnesses
ITN	insecticide-treated net
MoHSW	Ministry of Health and Social Welfare
MSH	Management Sciences for Health
ORS	oral rehydration salts
TFDA	Tanzania Food and Drug Authority

BACKGROUND

The Tanzania Ministry of Health and Social Welfare (MoHSW) through Tanzania Food and Drug Authority (TFDA) with technical assistance from Management Sciences for Health (MSH) has been implementing the accredited drug dispensing outlet (ADDO) program in Tanzania since 2003. The ADDO program aims to improve access to quality pharmaceuticals and pharmaceutical services in rural and periurban regions through an accreditation process that converts existing drug retail outlets, duka la dawa daridi, into duka la dawa muhimu (DLDM) or ADDOs. In May 2006, a child health component based on Intergrated Management of Childhood Illnesses (IMCI) methodology was incorporated into the ADDO program.

The ADDO program is currently implemented in eight regions, and full national coverage is expected to be achieved by 2011. In these eight regions, there are currently 1,712 ADDOs and 2,753 trained dispensers. Table 1 shows the number of ADDOs and trained dispensers by region.

Table 1. Number of ADDOs by Region

Region	Number of ADDOs	Number of Trained Dispensers
Lindi	28	383
Mbeya	279	888
Morogoro	475	395
Mtwara	137	151
Pwani	272	160
Rukwa	272	305
Ruvuma	174	211
Singida	75	260

In addition to overall technical oversight, MSH has been directly involved in supporting implementation in Ruvuma and Mororgoro regions, including mentoring district teams and participating in supervision visits.

ADDO Program Reporting Mechanism

Monthly reporting by ADDOs is one of the monitoring mechanisms set to continuously identify, track, and resolve problems on the course of implementation. For the child health component, reports specifically track trends in the number of children under five treated for key childhood illnesses (as identified in IMCI), referrals, and availability of medicines to treat the illnesses.

The three main reporting levels are shown in figure 1, and, for each level, reporting tools were developed and disseminated.

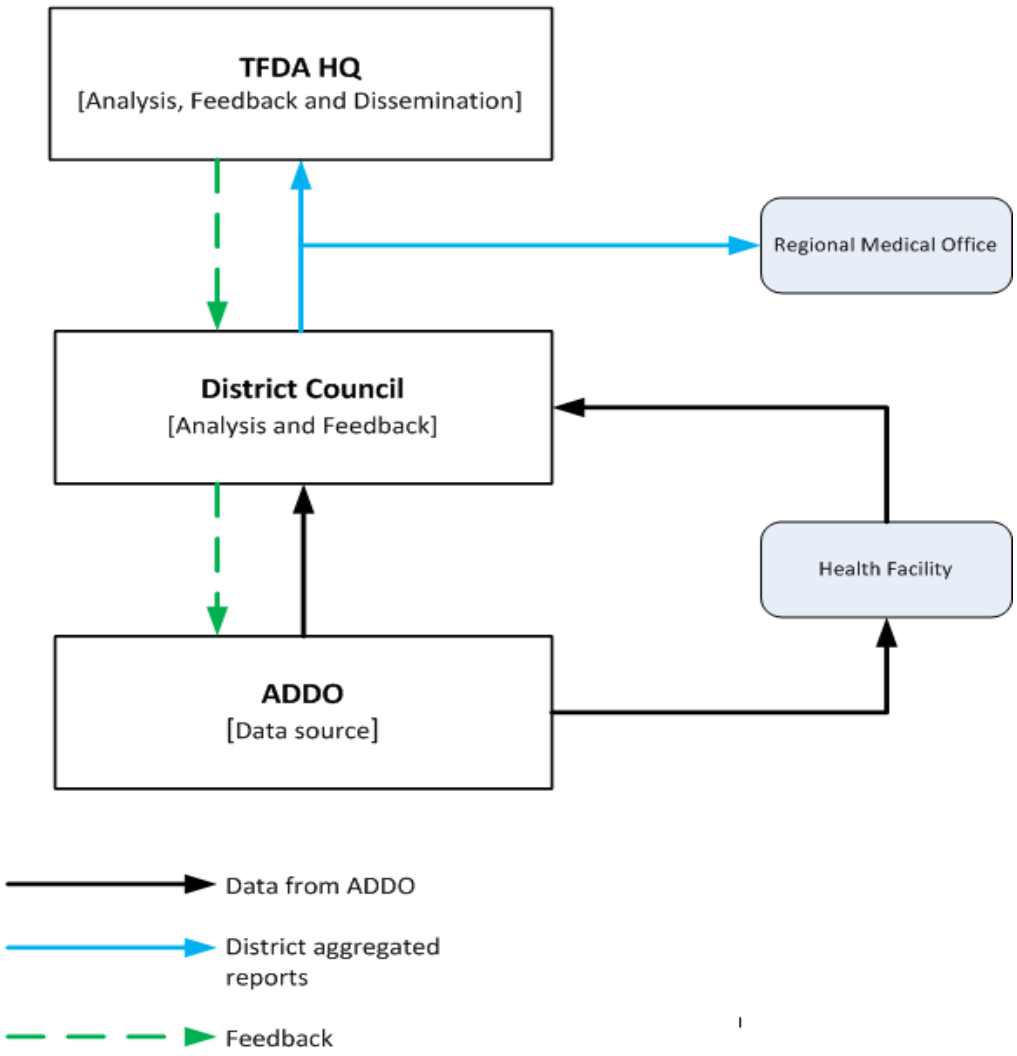


Figure 1. ADDO program reporting mechanism

ADDO Level

The ADDO owners and dispensers (for both human and veterinary ADDOs) submit monthly reports to a nearby health facility.[1] The health facility facilitates the onward submission of the reports to the district council. Dispensers or owners may also submit their reports directly to the district council.

District and Council Level

At the district level, the district pharmacist and the IMCI/malaria focal person are responsible for—

- Coordinating collection of all ADDO reports from health facilities and or ADDOs
- Compiling data from various ADDOs, analyzing the data, and producing a district-wide report that is submitted to TFDA; a copy is sent to the office of the regional medical office
- Disseminating the report through regular Council Food and Drug Committee and Community Health Management Team [CHMT]) meetings
- Providing feedback to the ADDOs and Cascade supervisors[2]

TFDA Level

TFDA aggregates all district reports into quarterly, midyear, or annual national reports and provides feedback to the regions and districts on a regular basis. The national reports are disseminated through the MoHSW's Medicines Access Steering Committee and other relevant stakeholders' forums. Plans are underway to have the reports posted on TFDA's website.

About this Report

Reporting tools have been disseminated since 2007; however, the collected data has not been used to generate any information. This is the first attempt to generate information from the collected data and document experiences on the functioning of the reporting system. This report summarizes key findings from district monthly reports of Ruvuma and Morogoro regions, which were collected from July 2007 to August 2009.

Methodology

District-level reports were collected from TFDA and compiled and analyzed using Microsoft Excel spreadsheets. Similarly, reports from individual ADDOs were analyzed.

[1] Health facilities are preferred to facilitate the logistics of reporting because of their frequent communication with the district and proximity to ADDOs.
[2] A cascade supervision system exists in some districts.

RESULTS

Distribution of ADDOs

There are five districts in Ruvuma region with a total of 174 ADDOs (September 2009). The distribution of ADDO per district is presented in table 2. The numbers of ADDOs in the region have decreased from 210 in 2005 to 174 in 2009 because of various factors, such as loss of accreditation status, loss of dispensers, and closure of business. Available reports for Ruvuma region covered the period from January to June 2009.

Table 2. Distribution of ADDO per District–Ruvuma (2009)

District	Number of ADDOs
Mbinga	60
Namtumbo	18
Songea Rural	25
Songea Urban	45
Tunduru	26
Total	**174**

Morogoro region has 475 accredited ADDOs in five districts. Table 3 presents the distribution of ADDO per district in Morogoro. The presented data for Morogoro covers the period from July 2007 to September 2009.

Table 3. Distribution of ADDO per District–Morogoro (2009)

District[3]	Total Number of ADDOs
Kilombero	144
Kilosa	166
Morogoro Rural	42
Mvomero	71
Ulanga	52
Total	**475**

[3] There are no ADDOs in Morogoro municipal district.

Reporting Rate

Thirteen monthly reports were received from four districts (out of 24 expected reports) of Ruvuma—most came from Mbinga and Namtumbo (table 4). The proportion of ADDOs submitting their monthly reports in each district varied from 36 percent in Songea Rural to 72 percent in Mbinga (table 5).

Table 4. Number of Reports Submitted to TFDA per District (2009)

Quarters	Mbinga	Namtumbo	Songea Rural	Tunduru	Total
Jan/Mar	3	1	3	1	8
Apr/Jun	2	3	–	–	5
Total	**5**	**4**	**3**	**1**	**13**

Table 5. ADDO Reporting Rate–Ruvuma (2009)

District (N)	Number of ADDOs Submitting Reports (%)
Mbinga (60)	43 (71.7)
Namtumbo (18)	9 (50)
Songea Rural (25)	9 (36)
Songea Urban (45)	0
Tunduru (26)	15 (57.7)
Total	**76**

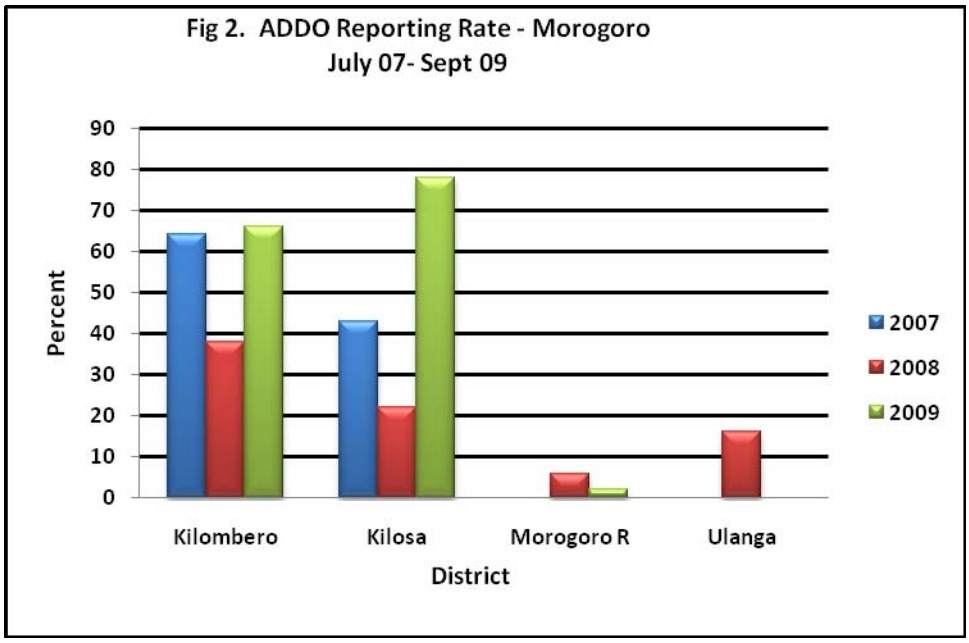
Forty-five (July 2007 to Sept 2009) monthly reports were submitted from four districts (out of 108 expected reports) of Morogoro region. Most reports came from Kilombero and Kilosa districts (table 6).

Table 6. Number of Reports Submitted per District–Morogoro (July 07–Sept. 09)

Year	Quarters	Kilombero[4]	Kilosa	Morogoro Rural	Ulanga	Total
	Jul/Sep	3				3
2007	Oct/Dec	3	3			6
	Jan/Mar	3	3	1		7
	Apr/Jun	3	1			4
	Jul/Sep	3			2	5
2008	Oct/Dec	3			3	6
	Jan/Mar	3	3	3		9
	Apr/Jun		3			3
2009	Jul/Sep		2			2
Total		**21**	**15**	**4**	**5**	**45**

[4] Submitted quarterly reports.

Kilombero and Kilosa districts show similar trends in reporting rates with a decrease in reporting rates from 2007 to 2008. This decrease was followed by a slight increase in 2009. Morogoro rural, on the other hand, shows a decrease from 2008 to 2009 (figure 2).

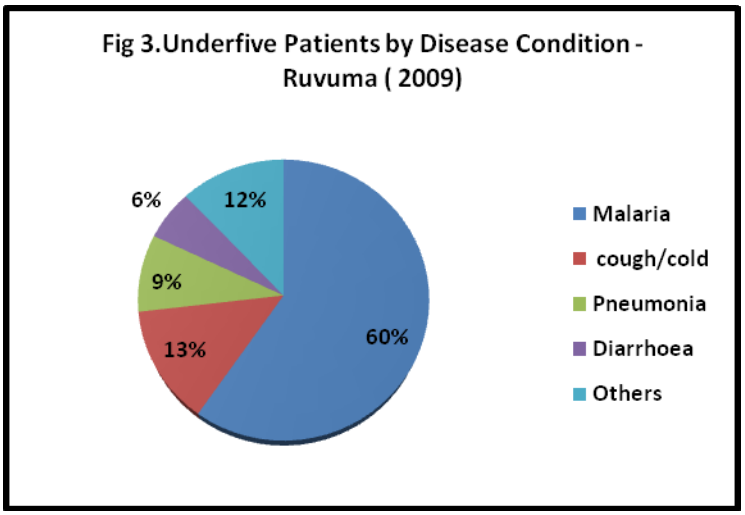


Disease Burden

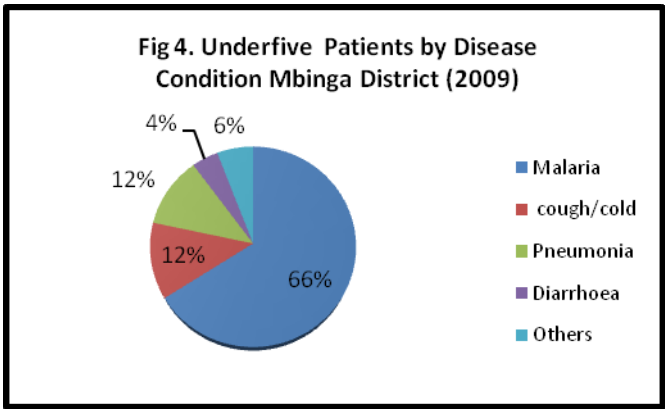
A total of 50,839 patients were treated in Ruvuma during the reporting period. Of the 50,839 patients, 11,602 (22.8 percent) were children under five (table 7). Malaria accounted for 60 percent of under five consultations, acute respiratory infections accounted for 22 percent of cases, and diarrheal diseases accounted for 6 percent of cases (figure 3).

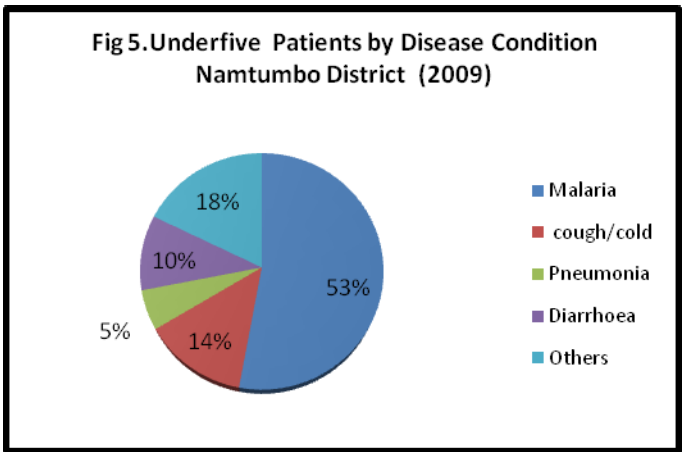
Table 7. Proportion of Under Fives Treated through ADDOs–Ruvuma (2009)

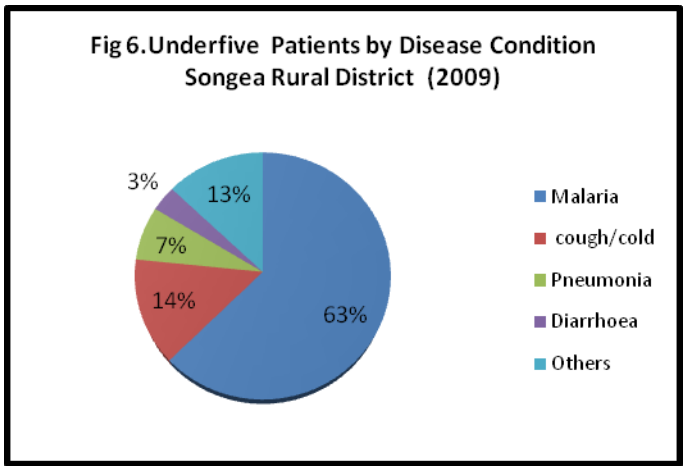
District (N)	Total Patients	Under Five Patients (%)
Mbinga (60)	32,742	5,281 (16)
Namtumbo (18)	8,448	2,841 (34)
Songea Rural (25)	6,758	2,642 (39)
Songea Urban (45)	–	–
Tunduru (26)	2,891	838 (29)
Total	**5,0839**	**11,602**

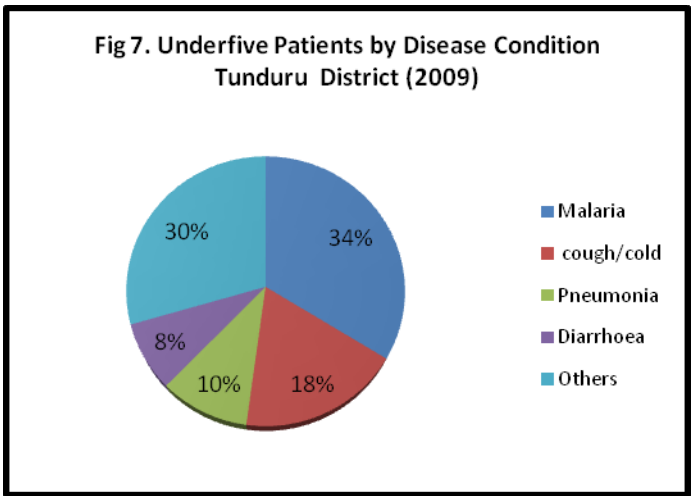


Figures 4 through 7 show the proportion of under five children treated by disease condition through ADDOs in each district of Ruvuma. Over 50 percent of all consultations were because of malaria in Mbinga, Namtumbo, and Songea Rural districts, and, in Tunduru malaria, accounted for 34 percent of consultations.





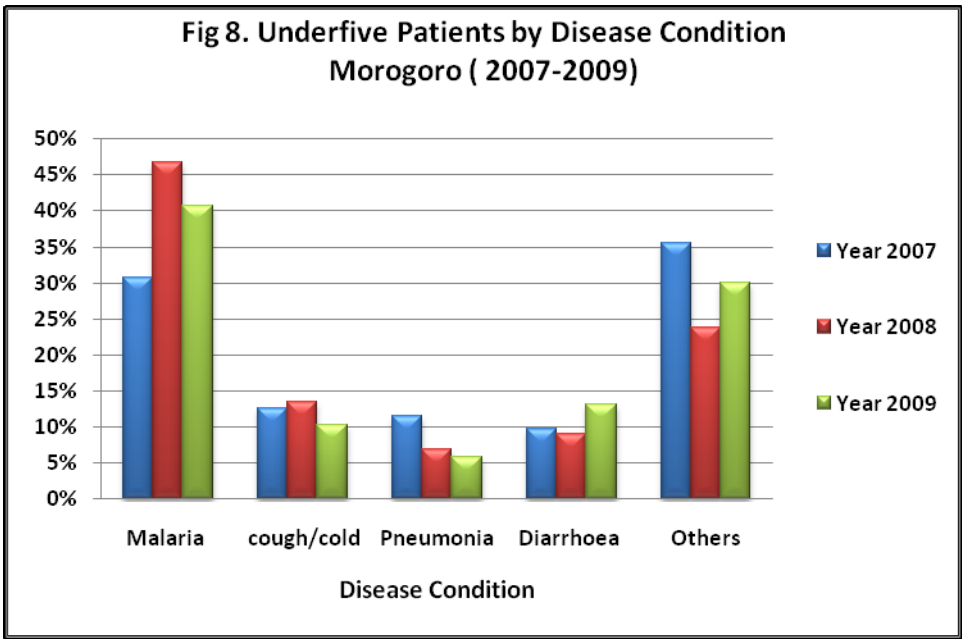




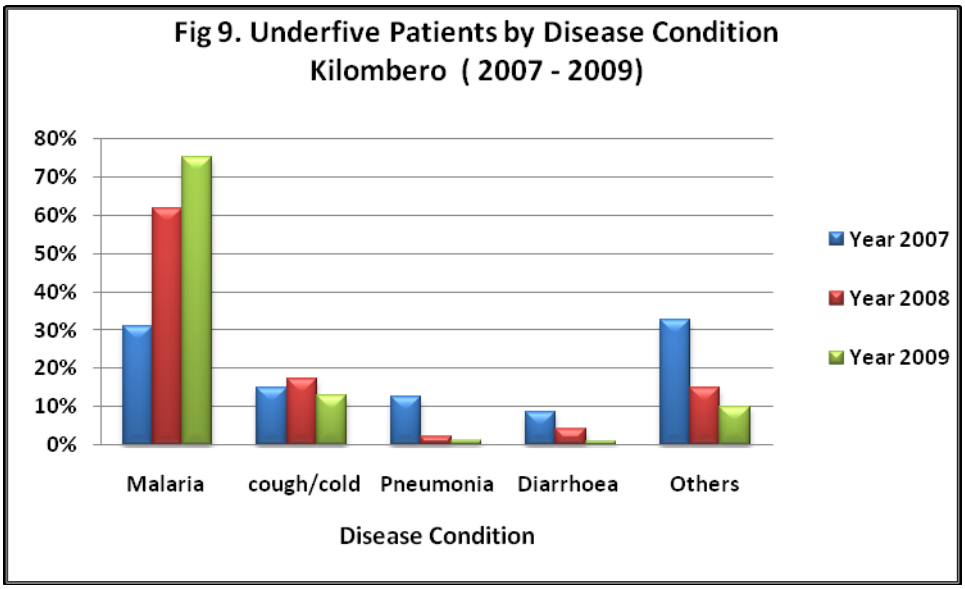
In Morogoro, 168,066 patients were treated through ADDOs; of these, 66,916 (39.8 percent) were children under five (table 8). The proportion of under fives treated increased from 44 percent in 2007 to 62 percent in 2009 for Kilombero district (figure 8). On the contrary, Morogoro Rural showed a decrease from 71 percent in 2008 to 36 percent in 2009.

Table 8. Proportion of Under Fives Treated through ADDOs–Morogoro (2007–2009)

Year	Total Patients	U5 Patients (%)
2007	55,608	19,718 (35)
2008	61,147	27,762 (45)
2009	51,309	19,436 (38)
Total	**168,064**	**66,916 (40)**



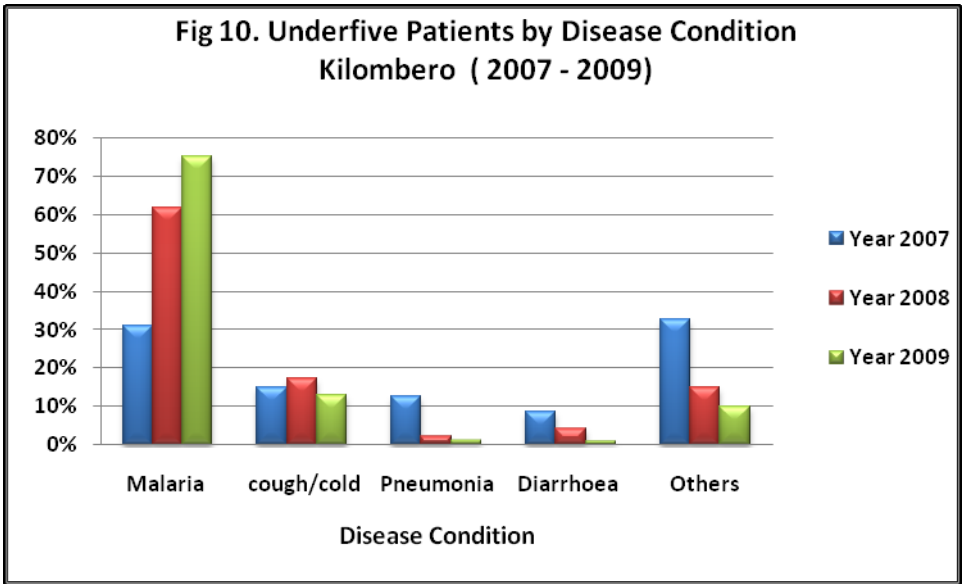
In 2008 and 2009, most of the consultations were because of malaria (47 percent and 41 percent respectively). In 2007, most consultations were because of conditions other than malaria, diarrhea, and acute respiratory infection (figure 9).

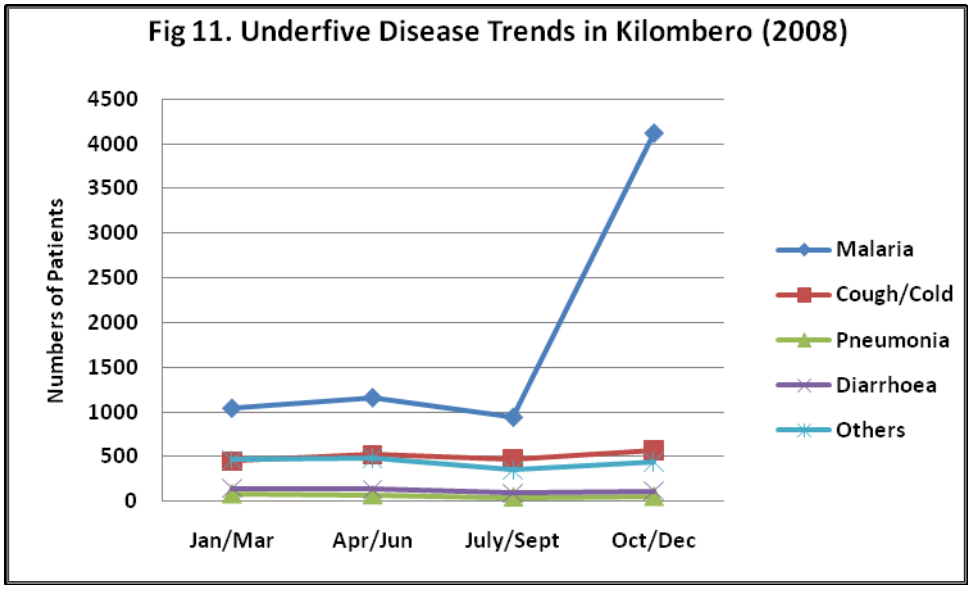


Kilombero District

Overall, malaria was the leading cause of all consultations (figure 10). The proportion of reported cases increased from 31 percent in 2007 to 75 percent in 2009. On the other hand, the proportion of others decreased from 33 percent in 2007 to 10 percent in 2009. The proportion of

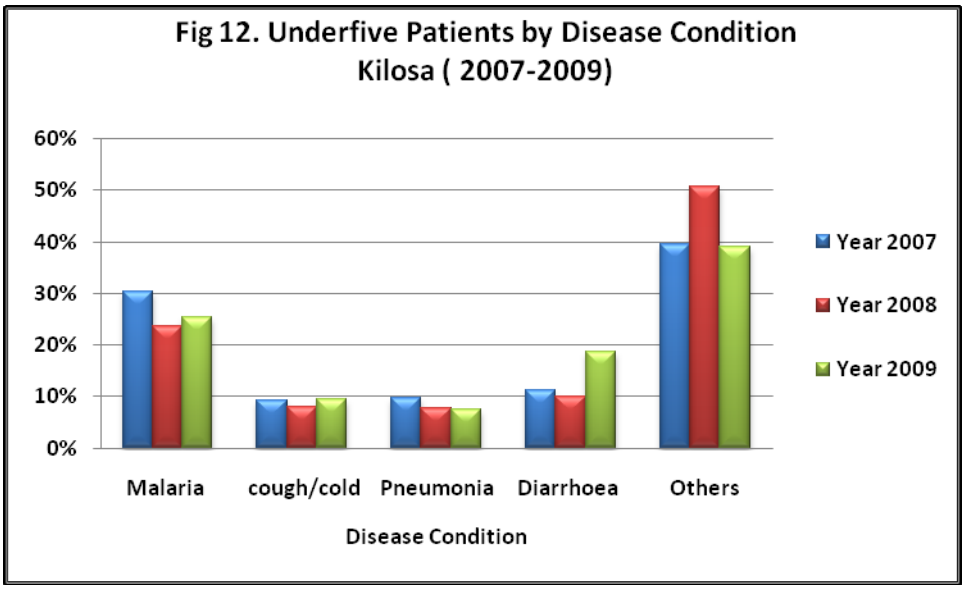
coughs or colds remained almost the same over the three-year period, and the proportion of pneumonia and diarrhea cases decreased. Figure 11 examines the disease trends in 2008. The numbers of malaria cases increased from September to December; however, the trends of other disease conditions remained the same throughout the year





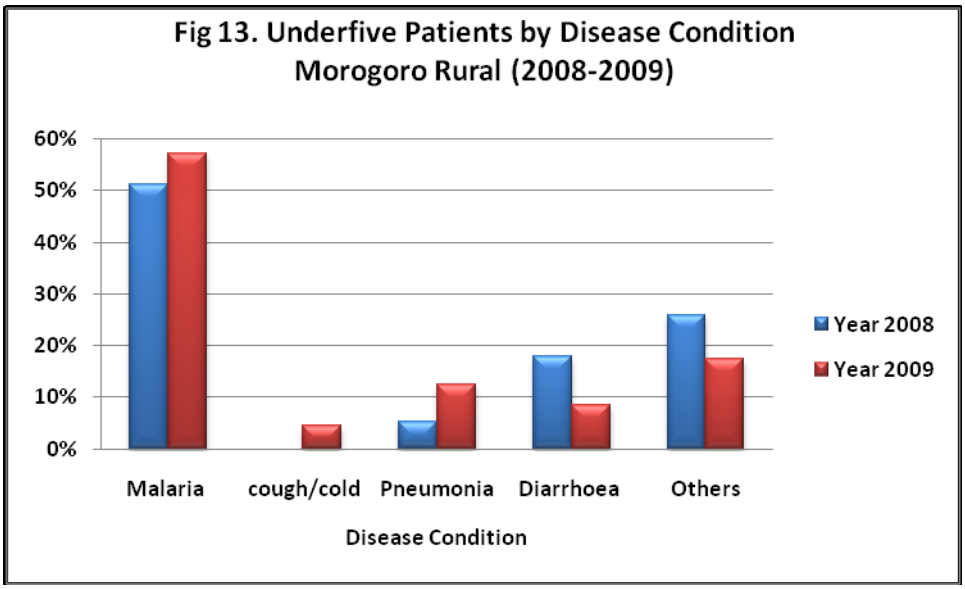
Kilosa District

In this district, malaria was the second leading cause of consultations. The leading cause was other disease conditions (40 percent in 2007, 51 percent in 2008, and 39 percent in 2009). A high proportion of diarrhea (19 percent) consultations were reported in 2009 (figure 12).



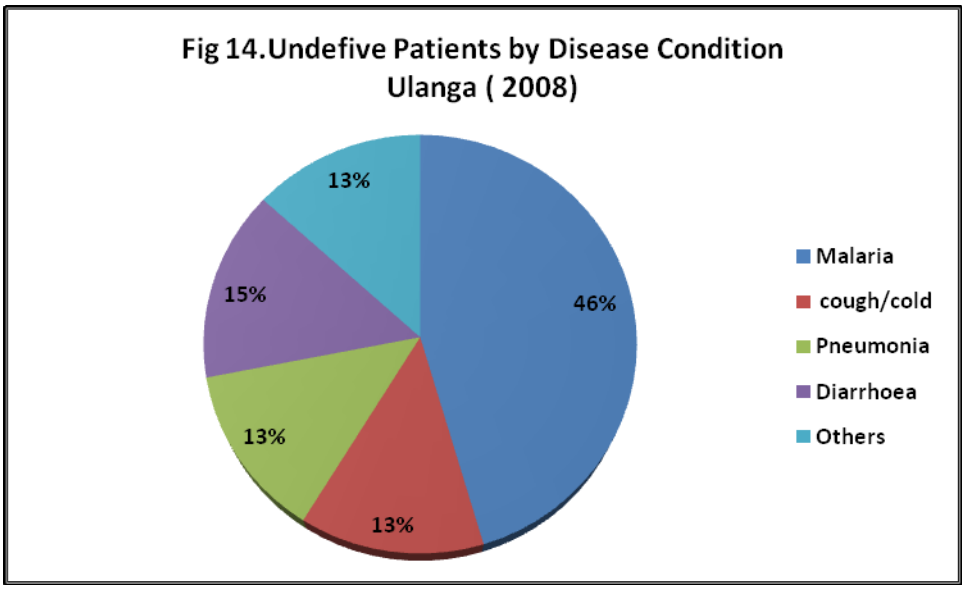
Morogoro Rural

Morogoro Rural submitted reports for 2008 and 2009. During this reporting period, malaria accounted for more than 50 percent of all consultations. There was a higher proportion of other disease conditions and diarrhea in 2008 (figure 13).



Ulanga

In 2008, malaria accounted for 46 percent of consultations. Acute respiratory infections accounted for 26 percent of cases and diarrhea accounted for 15 percent of cases (figure 14).



Referrals

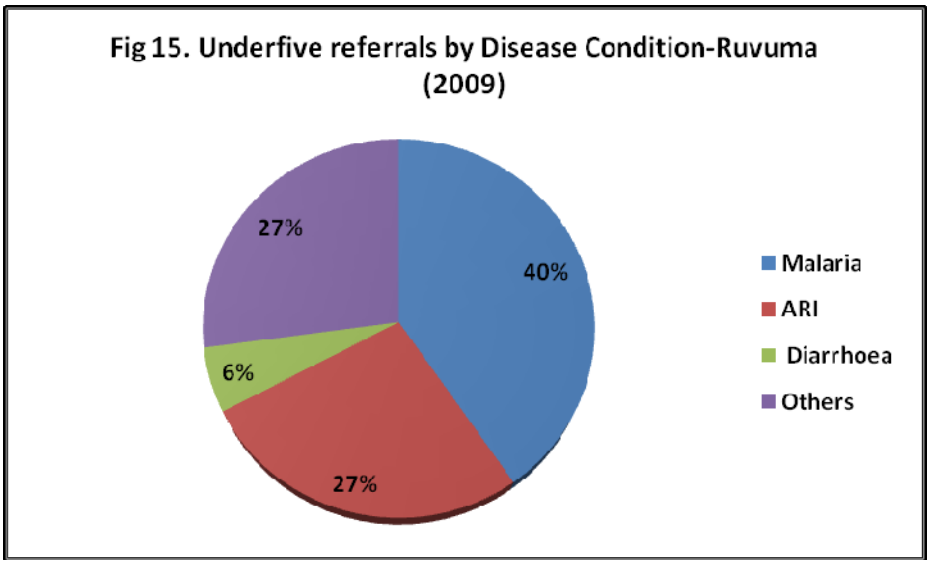
Overall, under fives referrals accounted for 92 percent of all referrals in Ruvuma, ranging from 58 percent to 95 percent (table 9). Almost 4 percent of all under five consultations were referred (table 10). Malaria and acute respiratory infections were the most common reasons for referrals (figure 15).

Table 9. Total Referrals–Ruvuma (2009)

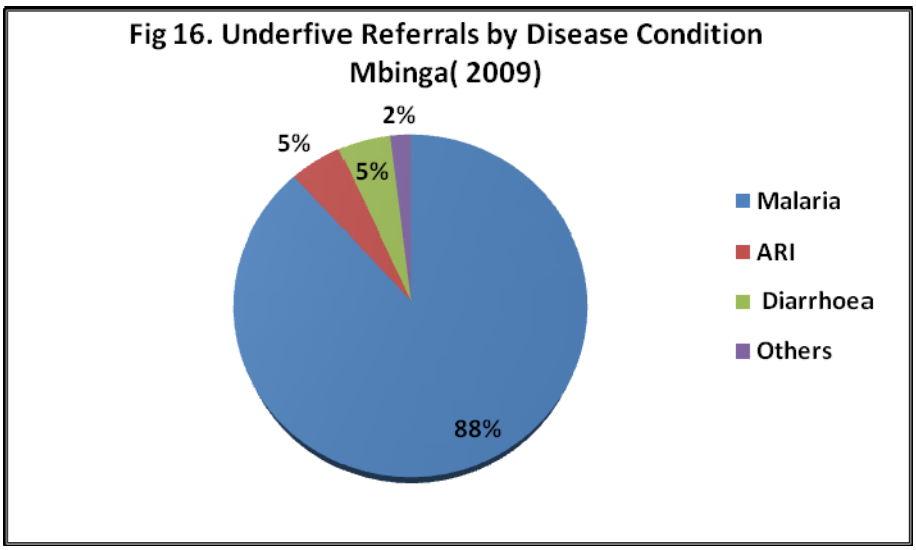
District	Total Referrals	Under Five Referrals (%)
Mbinga	107	102 (95)
Namtumbo	46	41 (89)
Songea R	297	277 (93)
Tunduru	19	11 (58)
Total	**469**	**431 (92)**

Table 10. Proportion of Under five Referrals–Ruvuma (2009)

District	Total Under Five	Under Five Referrals (%)
Mbinga	5,281	102 (2)
Namtumbo	2,841	41 (1)
Songea R	2,642	277 (10)
Tunduru	838	11 (1)
Total	**11,602**	**431 (3.7)**



Malaria was the single leading cause of referrals in Mbinga (88 percent). In Namtumbo and Tunduru, malaria and acute respiratory infections contributed to about 70 percent of referrals. Songea Rural reported other conditions (40 percent) and acute respiratory infections (34 percent) as the leading cause of referrals (figures 16 through 19).



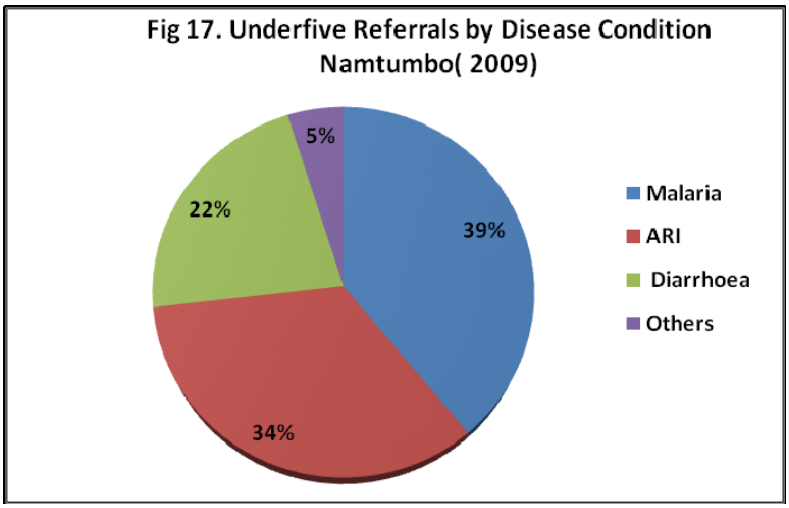


Fig 17. Underfive Referrals by Disease Condition
Namtumbo(2009)
5%
22%
39%
34%
Malaria
ARI
Diarrhoea
Others

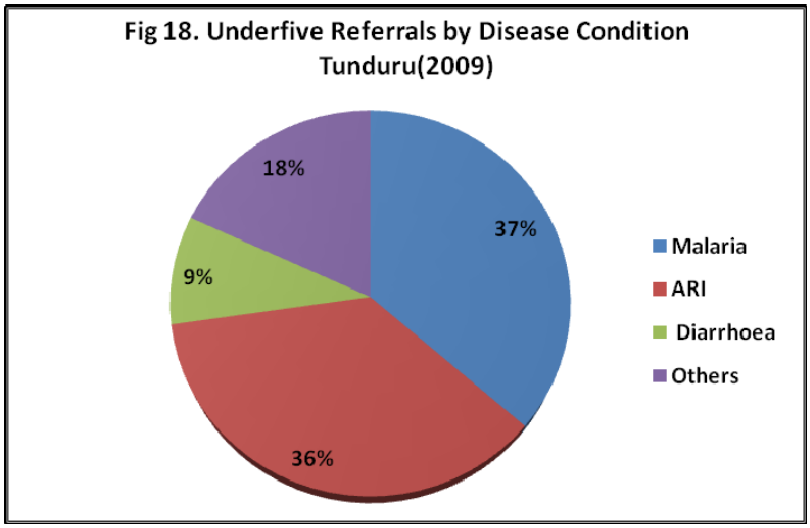


Fig 18. Underfive Referrals by Disease Condition
Tunduru(2009)
18%
37%
9%
36%
Malaria
ARI
Diarrhoea
Others

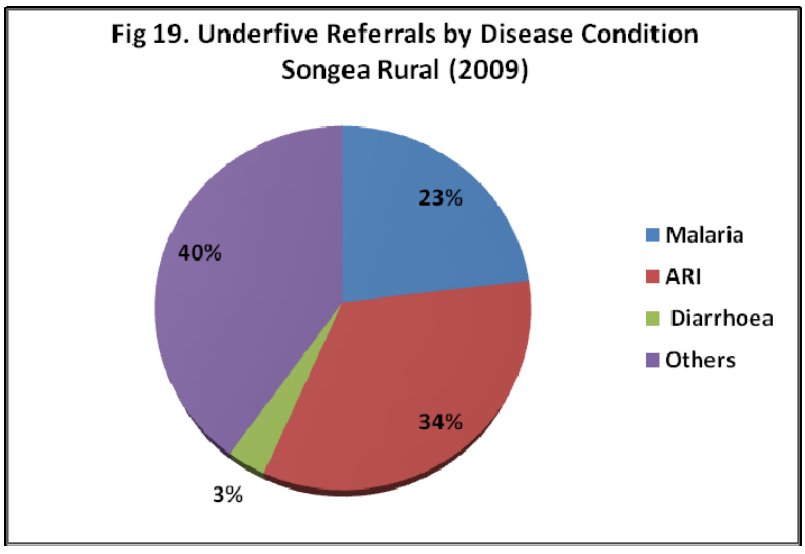


Fig 19. Underfive Referrals by Disease Condition
Songea Rural (2009)
23%
40%
34%
3%
Malaria
ARI
Diarrhoea
Others

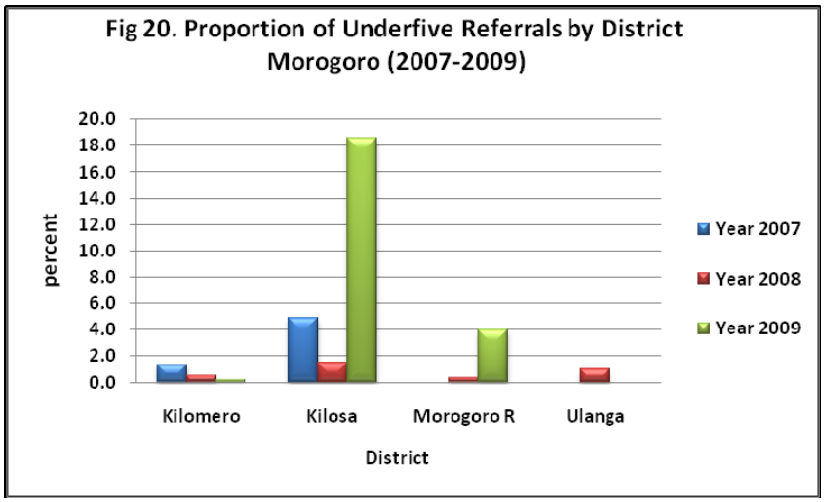
Referrals reporting in Morogoro varied between districts. Most districts reported the number of under five referrals only. Kilosa (2009), Morogoro Rural (2009), and Ulanga (2008) districts reported both total and under five referrals (table 11). In 2009, more than 90 percent of referred patients in Kilosa and Morogoro rural districts were children under five years old. Also, in 2009, 13 percent of under five consultations were referred to health facilities (table 12). Most referrals came from Kilosa district (figure 20).

Table 11. Total Referrals Morogoro (2007–2009)

District	Year	Total Referrals	Under Five Referrals (%)
	2007		149
	2008		63
Kilombero	2009		12
	2007		406
	2008		110
Kilosa	2009	2,626	2,463 (94)
	2008		1
Morogoro R	2009	23	22 (96)
Ulanga	2008	144	82 (57)
Total		**2,793**	**3,308**

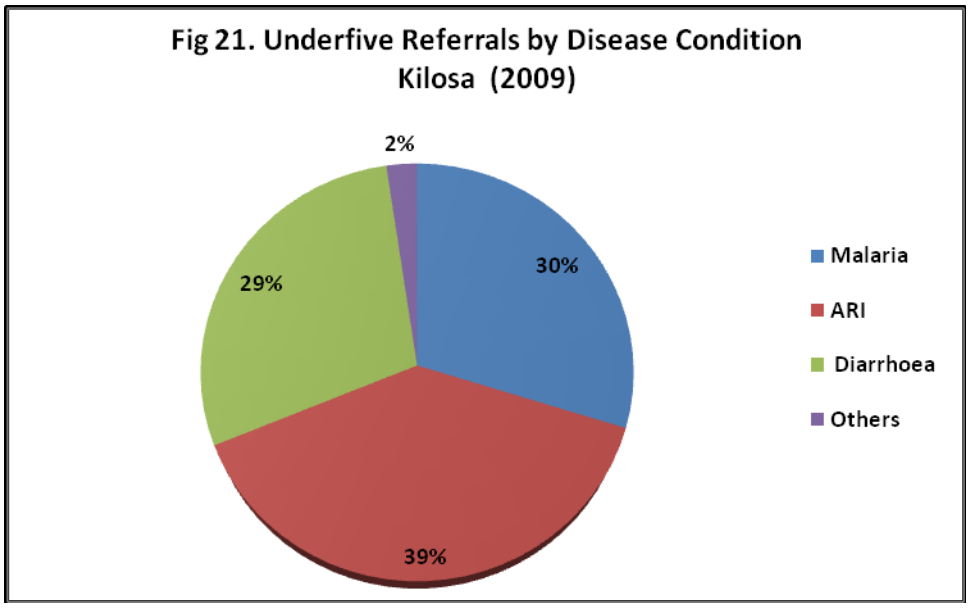
Table 12. Proportion of Under Five Referrals–Morogoro (2007–2009)

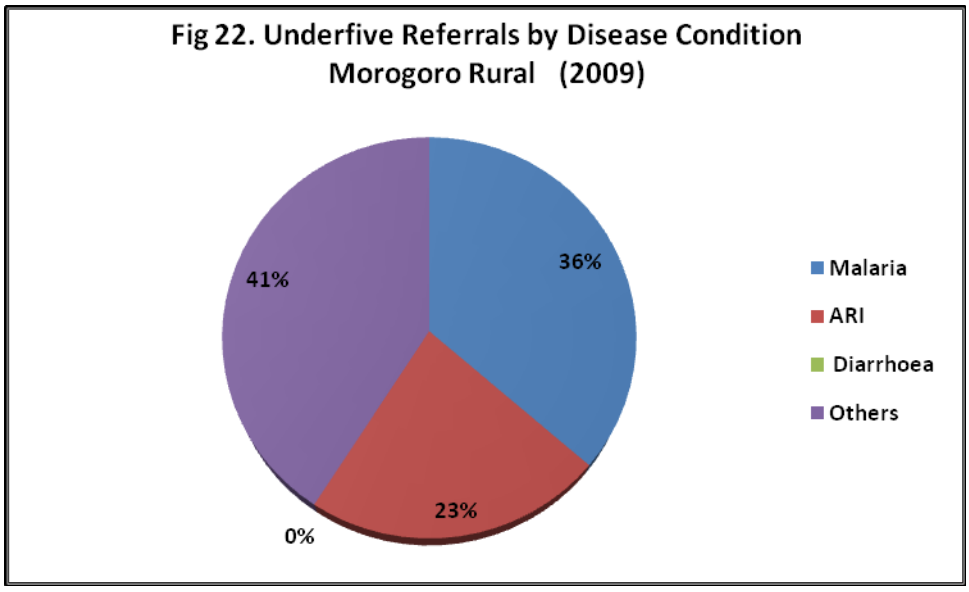
Year	Total Under Fives	Under Five Referrals (%)
2007	19,718	555 (3)
2008	27,762	256 (1)
2009	19,436	2,497 (13)
Total	**66,916**	**3,308 (5)**

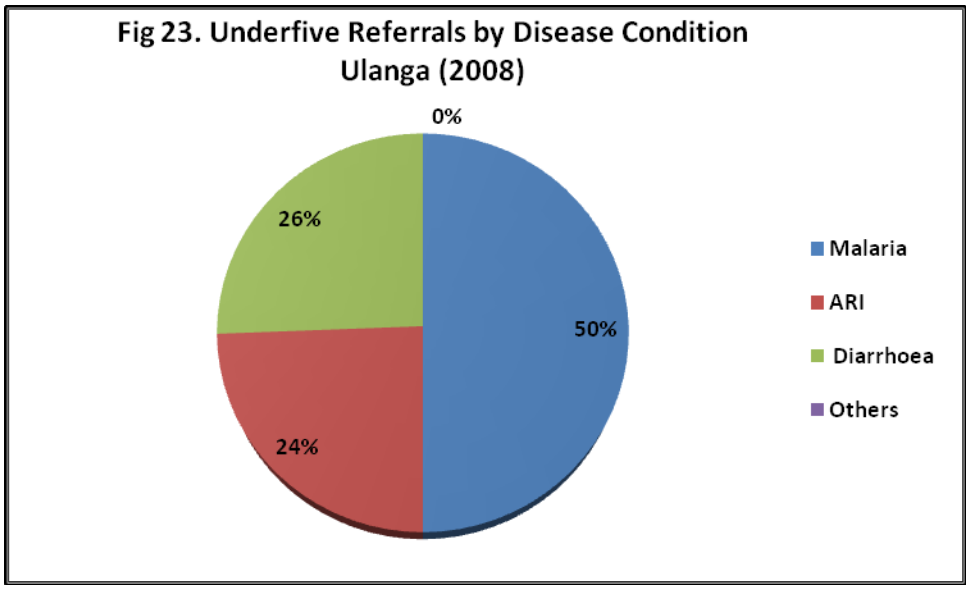


Referrals by Disease Condition

Information on referrals by disease condition was available for Kilosa (2009), Morogoro Rural (2009), and Ulanga (2008) districts. In Kilosa, acute respiratory infection accounted for 39 percent of referrals. Malaria and diarrhea accounted for about 30 percent of referrals (figure 21). Forty-one percent of referrals in Morogoro Rural were because of other disease conditions, and malaria and acute respiratory infections accounted for 36 percent and 23 percent respectively (figure 22). Half of referrals in Ulanga were because of malaria. The remaining referrals were because of acute respiratory infections and diarrhea (figure 23).







Stock-Outs

Insecticide-treated net (ITN) stock-outs at ADDOs were reported in Mbinga (51.2 percent) and Namtumbo (44.4 percent). In Tunduru, about 67 percent of shops reported artemether-lumefantrine (ALu) stock-outs. In Mbinga, 27.9 percent and 20.9 percent of shops reported oral rehydration salts (ORS) and ALu stock-outs respectively.

Table 13. Shops Reporting Stock-Outs–Ruvuma (2009)

District	SO* ORS	SO ALu	SO Cotrim	SO ITN
Mbinga (43)[5]	12	9	4	22
Namtumbo (9)	1	3	1	4
Songea R (9)	0	0	0	–
Tunduru (15)	3	10	2	–
Total	**16**	**22**	**7**	**26**

*SO – stock-outs

In Morogoro, ITN stock-outs were reported in all districts. More than 10 percent of shops in Kilosa (2009) reported ORS, ALu, and contrim stock-outs.

[5] Some ADDOs had more than one item out of stock.

Table 14. Reported Stock–Outs–Morogoro (2007–2009)

District	Year	# DLDM Reporting	ORS	SO ALu	Cotrim	ITN
	2007	64	0	0	0	57
	2008	38	0	0	0	30
Kilombero	2009	66	0	0	0	62
	2007	43	–	0	–	–
	2008	22	0	0	–	–
Kilosa	2009	78	11	10	12	30
	2008	6	–	0	–	–
Morogoro R	2009	2	0	1	0	–
Ulanga	2008	16	6	8	5	11

*SO – stock-outs

GENERAL OBSERVATIONS AND RECOMMENDATIONS

Overall Reporting

Districts are at different levels of reporting. Some districts submitted more monthly reports than others. Although Kilombero (Morogoro) submitted most of the monthly district reports (July 2007–Sept 2009), Mvomero (Morogoro) did not submit any. For most of this reporting period, there were no reports from Ruvuma (reports were available for January–June 2009). Districts in Ruvuma and Morogoro submitted 54 percent and 42 percent of the expected monthly reports. Not all ADDOs submitted monthly reports to the district, and the submitted reports were often inaccurate and/or incomplete.

It is worth noting that Kilombero district submitted quarterly reports instead of monthly reports, and, in 2008, the district managed to submit reports throughout the year. The possibility of having districts submit quarterly reports instead of monthly reports should be looked at to give the district pharmacy more time for following up and collating information.

The relatively new reporting system linking the private and public sectors coupled with lack of experience by the CHMT in working with ADDOs could explain the low reporting rates. A follow-up mechanism needs to be established/strengthened at the TDFA level to ensure that all districts submit their reports at a required time. The CHMT has a unique opportunity to work with ADDO providers to ensure that reports are not only submitted on time but that they are of good quality. The CHMT's role should be extended to mentoring ADDO providers to correctly fill out the reports.

Disease Burden

Children younger than five years old accounted for about 20 percent of all patients seen at ADDOs in Ruvuma region (2009), and, in Morogoro, they accounted for 35 percent to 45 percent of all consultations. Comparing this data with that collected during supervision visits would be interesting.

Overall, malaria accounted for 60 percent of under five patients in Ruvuma region in 2009. A lower proportion of malaria patients was reported in Morogoro region for 2008 and 2009 (47 percent and 41 percent). The relatively high proportion of "others" in Morogoro could explain the discrepancies. A similar pattern was noted in Tunduru, Kilosa (all) and Morogoro Rural (2008). Interestingly, in Kilombero district, there was a decrease in the proportion of "others" from 33 percent to 10 percent between 2007 and 2009. This decrease could be due to an improvement in reporting and/or accuracy in case detection. Further investigating during supervision visits, determining what really constitutes "others," and checking the dispensers' understanding of "others" would be useful.

With the exception of Kilombero district (2008), examining disease trends over a one-year period was not possible. Establishing trends of common childhood illnesses to forecast medicine needs appropriately is important for districts.

Referrals

In addition to treating minor illnesses, ADDO dispensers are trained to assess for danger signs (based on the criteria presented in annex 1) among children younger than five years old and to refer those with one or more danger signs to a nearby facility.

In both regions, available data showed that under five patients accounted for 57 percent to 96 percent of all referrals. The referral rate among under five patients seen at ADDOs was less than 5 percent for most districts, which was slightly lower than 8 percent—the reported average referral rate by most health facilities.[6] However, in Kilosa (2008) and Songea Rural (2009) districts, the rate was 18.6 percent and 10 percent. Malaria and acute respiratory infections were the most common causes of referrals across all districts of Ruvuma region with the exception of Songea Rural, where "others" was the leading cause. Causes of referral were different for each reporting district—malaria in Ulanga (2008), others in Morogoro Rural (2009), and acute respiratory infections in Kilosa (2009).

Stock-Outs

ADDOs are asked to report stock-outs of certain medicines for that month. Reported stock-outs on ITNs should be interpreted with caution because stocking ITNs requires accreditation by the national discount voucher scheme providers under the National Malaria Control Program. Thus, only a few ADDOs in Mbinga and Namtumbo were able to do so. Many ADDOs in Tunduru reported ALu stock-outs because their locations are hard to reach, and they are far from the regional arteminisin-based combination therapy distributor.

[6] Alfonso C. Rosales and Peter J. Winch. 2007. *CCM Essentials.* Chapter 8: Community-based referral systems for CCM programs (Draft).

CONCLUSION

During the three-year period, more than one reporting format has been used in collecting monthly reports. Consequently, compiling all the reports into one document has been challenging.

ADDOs attend to a considerable number of children. The shops offer an ideal platform for reaching children younger than five years old, especially in areas where public health facilities are scarce or inaccessible.

Although the number of ADDO reporting is low and probably not representative, this report provides an extremely useful insight on the functioning of the reporting system over the past three years. The report points out areas that can be strengthened in collecting reports and providing feedback. Most importantly, it shows the need to have a strong oversight function that can ensure consistent and accurate reporting.

ANNEX 1. REFERRAL CRITERIA FOR CHILDREN UNDER 5 YEARS OF AGE

Referral Criteria for Children under 5 Years of Age

Under 2 Months of Age	2 Months to 5 years of age
Condition does not improve or worsens	Condition does not improve or worsens
Convulsions	Convulsions
Unable to drink or breastfeed	Unable to drink or breastfeed
Fast breathing (60 breaths per minute or more)	Vomiting everything
Severe chest in-drawing	Lethargic or unconscious
Fever	
Low body temperature	
Skin pustules	
Umbilicus red or draining pus	
Movement only when stimulated or no movement even when stimulated	
Grunting	

ANNEX 2. RUVUMA REGION DATA

Overall Under Five Patients by Disease Condition–Ruvuma (2009)

District	Malaria	Cough/Cold	Pneumonia	Diarrhea	Others	Total
Mbinga	3,485	653	607	227	309	5,281
Namtumbo	1,503	384	156	292	506	2841
Songea R	1,655	369	187	89	342	2642
Tunduru	283	154	85	69	247	838
Total	**6,926**	**1,560**	**1,035**	**677**	**1,404**	**11,602**

Under Five Referrals by Disease Condition–Ruvuma (2009)

District	Malaria	ARI	Diarrhea	Others	Total
Mbinga	90	5	5	2	102
Namtumbo	16	14	9	2	41
Songea R	64	93	9	111	277
Tunduru	4	4	1	2	11
Total	**174**	**116**	**24**	**117**	**431**

ANNEX 3. MOROGORO REGION DATA

ADDO Reporting Rate–Morogoro (2007–2009)

District (N)	Year	Number of ADDOs Reporting (%)
	2007	64 (44.4)
	2008	38 (26.4)
Kilombero (144)	2009	66 (45.8)
	2007 (166)	43 (25.9)
	2008 (166)	22 (13.3)
Kilosa (166)	2009 (152)	78 (51.3)
	2008 (40)	6 (15)
Morogoro R (42)	2009 (42)	2 (5.6)
Ulanga (52)	2008	16 (30.8)

Proportion of Under Fives Treated (2007–2009)

District	Year	Total Patients	Under five Patients (%)
	2007	26,162	11,409 (44)
	2008	23,573	11,761 (50)
Kilombero	2009	9,108	5,637 (62)
	2007	29,446	8,309 (28)
	2008	19,154	7,301 (38)
Kilosa	2009	40,662	13,251 (33)
	2008	437	309 (71)
Morogoro R	2009	1,539	548 (36)
Ulanga	2008	17,983	8,391 (47)
Total		**168,064**	**66,916 (40)**

Under Five Patients by Disease Conditions–Morogoro (2007–2009)

District	Malaria	Cough/Cold	Pneumonia	Diarrhea	Others	Total
Kilombero	15,034	4,442	1,755	1,531	6,045	28,807
Kilosa	7,595	2,625	2,385	4,121	12,135	28,861
Morogoro R	471	25	84	102	175	857
Ulanga	3,811	1,123	1,101	1,242	1,114	8,391
Total	**26,911**	**8,215**	**5,325**	**6,996**	**19,469**	**66,916**

Under Five Patients by Disease Conditions–Morogoro (2007)

District	Malaria	cough/cold	Pneumonia	Diarrhea	Others	Total
Kilombero	3,531	1,705	1,443	989	3,741	11,409
Kilosa	2,517	774	813	924	3,281	8,309
Total	**6,048**	**2,479**	**2,256**	**1,913**	**7,022**	**19,718**

Under Five Patients by Disease Conditions–Morogoro (2008)

District	Malaria	Cough/Cold	Pneumonia	Diarrhea	Others	Total
Kilombero	7,269	2,017	249	489	1,737	11,761
Kilosa	1,718	586	565	736	3,696	7,301
Morogoro R	158	0	16	55	80	309
Ulanga	3,811	1,123	1,101	1,242	1,114	8,391
Total	**12,956**	**3,726**	**1,931**	**2,522**	**6,627**	**27,762**

Under Five Patients by Disease Conditions–Morogoro (2009)

District	Malaria	Cough/Cold	Pneumonia	Diarrhea	Others	Total
Kilombero	4,234	720	63	53	567	5,637
Kilosa	3,360	1,265	1,007	2,461	5,158	13,251
Morogoro R	313	25	68	47	95	548
Ulanga	–	–	–	–	–	–
Total	**7,907**	**2,010**	**1,138**	**2,561**	**5,820**	**19,436**

Proportion of Under Five Referrals–Morogoro (2007–2009)

District	Year	Total Under Five	Under Five Referrals (%)
	2007	11,409	149 (1.3)
	2008	11,761	63 (0.5)
Kilombero	2009	5,637	12 (0.2)
	2007	8,309	406 (4.9)
	2008	7,301	110 (1.5)
Kilosa	2009	13,251	2,463 (18.6)
	2008	309	1 (0.3)
Morogoro R	2009	548	22 (4)
Ulanga	2008	8,391	82 (1)
Total		**66,916**	**3,308 (4.9)**

Under Five Referrals by Disease Condition–Morogoro (2007–2009)

District	Year	Malaria	ARI	Diarrhea	Others	Total
Kilosa	2009	734	961	710	58	2,463
Morogoro R	2009	8	5	0	9	22
Ulanga	2008	41	20	21	0	82
Total		**783**	**986**	**731**	**67**	**2,567**