



# Malaria Surveillance Bulletin



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## Message from the Programme Manager

The Malaria surveillance bulletin for Tanzania has been designed by the National Malaria Control Programme (NMCP) to provide regular updates regarding the current estimated malaria burden in the country and the malaria control related services provided by the health facilities. The bulletin targets malaria partners, various stakeholders, and health care service providers. This first issue of the bulletin covers mainly annual indicators for the period 2014–2016 and subsequent updates will be released at quarterly/biannual intervals.

Recent data collected through the routine reporting system—health management information system (HMIS) and periodic surveys—malaria indicator surveys (MIS)—suggest that Tanzania is currently under a malaria epidemiological transition, with low, moderate and high transmission areas, each being home to roughly one-third of the population each. The details of the situation and the epidemiology of malaria in Tanzania are extensively described in recent NMCP documents: the national malaria strategic plan (NMSP) 2015–2020 and its surveillance, monitoring, and evaluation plan; an epidemiological profile of malaria and its control in mainland Tanzania (2013) and the MIS (2008, 2012, and 2016).

Currently, the NMCP is implementing the MSP 2015–2020 that aims to prepare the foundations of a malaria-free Tanzania. Three core interventions are: a) integrated malaria vector control; b) malaria diagnosis, treatment, preventive therapies and vaccine; and c) malaria surveillance and response. Other cross-sectional interventions included in the MSP are: a) social and behavioural change communication, b) monitoring and evaluation, and c) partnership development and resource mobilization.

The production of this bulletin would not have been possible without the collaborative efforts of the U.S. President's Malaria Initiative (PMI), MEASURE Evaluation and the Swiss TPH. The NMCP is confident that this bulletin will provide the necessary information for updates on malaria and malaria interventions in Tanzania. The programme also advocates that all stakeholders provide feedback and inputs to enable the NMCP to be more informed and provide evidence-based knowledge for decision making to implement efficacious initiatives towards the vision of a "Malaria free Tanzania".

Dr. Ally Mohamed

## The Burden of Malaria in Tanzania and its Regions

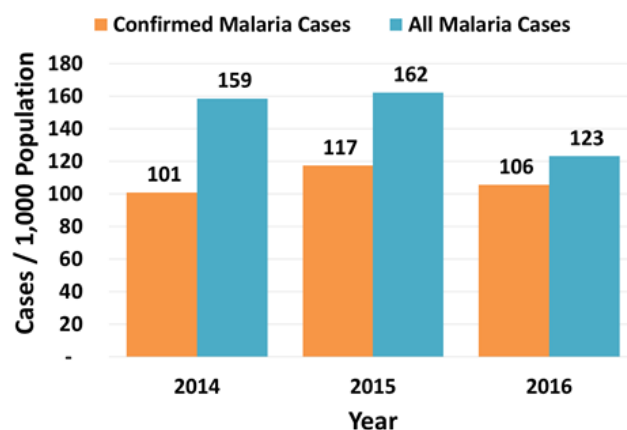
Routine- health-facility generated data provides three useful indicators to monitor the burden of malaria in the country: a) the annual malaria incidence per 1,000 population, b) the proportion of malaria cases compared to the total health facility work-load and c) the malaria test positivity rate in sentinel populations. The three indicators are useful to monitor the trends over time and the spatial distribution of malaria in regions and councils.

### Malaria morbidity rates in health facilities

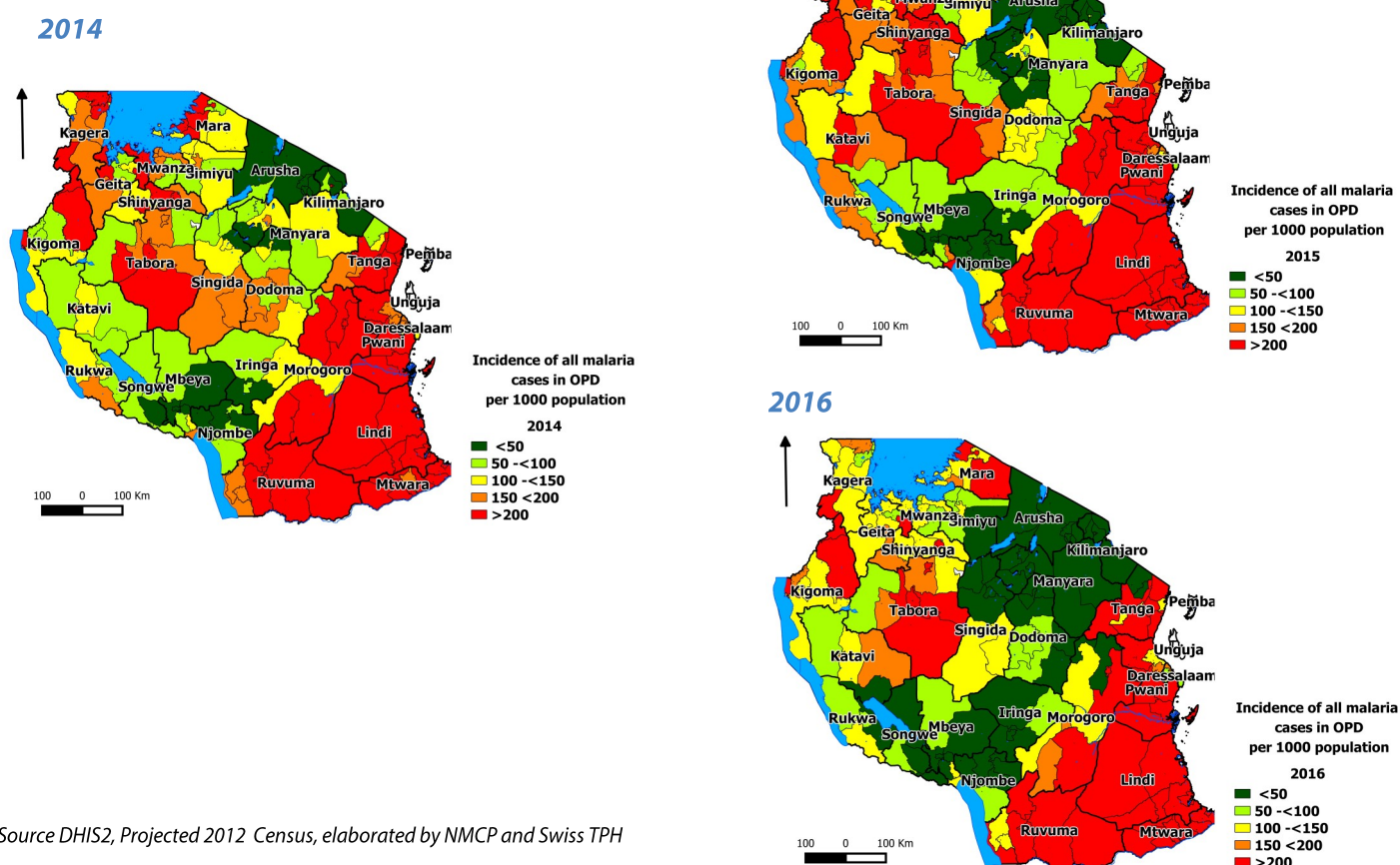
The first indicator—**annual malaria incidence rate**—is calculated by dividing the number of malaria cases reported in the Out-Patient Department (OPD) by 1,000 projected at-risk population in the relevant catchment area. The overall rate—that includes confirmed and clinical malaria cases—is decreasing in 2016, compared to the two previous years. However, the annual trends of confirmed malaria incidence rates remain quite unchanged (see **Figure 1a**).

Tanzania exhibits enormous heterogeneity in terms of malaria incidence. The geographical variation of the annual rate of uncomplicated malaria cases reported by health facilities (**Figure 1b**) demonstrates an increasing trend of relatively low -transmission (less than 50 cases per 1,000 population) areas in the central, northeast and southwest zones over the period 2014-2016. This indicator is affected by the accessibility of the population to health care facilities.

**Figure 1a: Annual malaria incidence per 1,000 population**



**Figure 1b: Annual malaria incidence by district per 1,000 population**



Source DHIS2, Projected 2012 Census, elaborated by NMCP and Swiss TPH

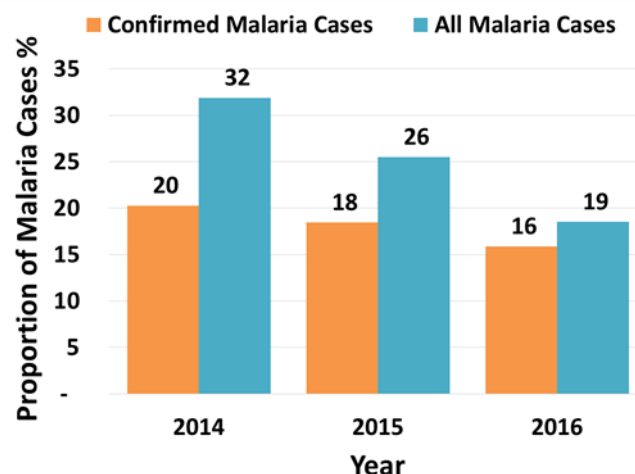
The second indicator—**proportion of malaria cases in OPD**—is measured by dividing the number of malaria cases out of all visits done in the OPD.

This indicator is less affected by accessibility to care and provides information about the burden of the disease among health services. Both the proportion of overall and confirmed malaria cases is decreasing yearly (see **Figure 2a**).

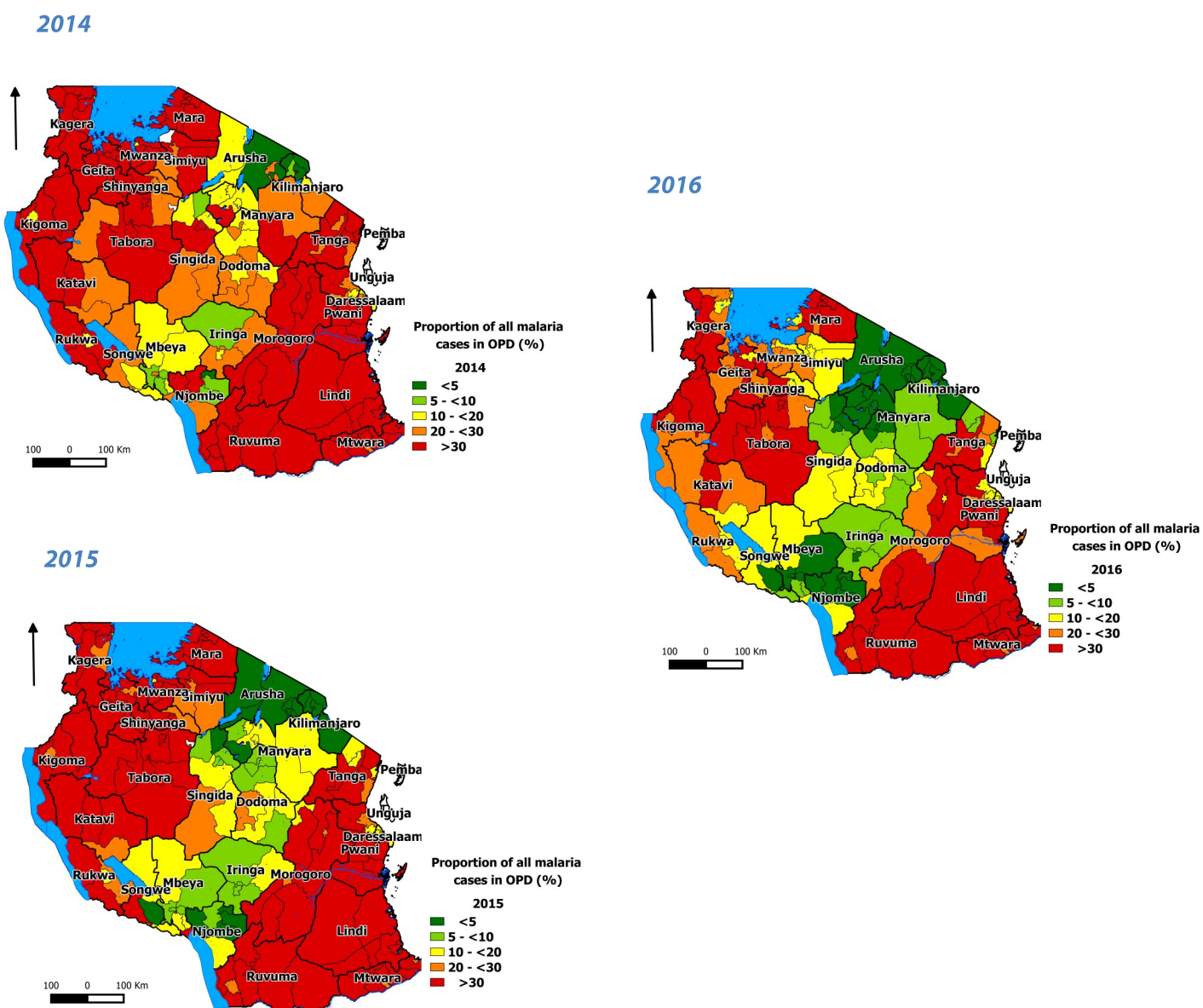
The pattern of heterogeneity and the geographical variation of the proportion of malaria cases reported by health facilities (**Figure 2b**) is similar to what has been shown in Figure 1b.

There is an increasing trend in the number of districts with low transmission (<5% & 5-<10) especially in the central, northeast and southwest zones over the years.

**Figure 2a: Annual proportion of malaria cases in OPD**



**Figure 2b: Annual proportion of all malaria cases by district**

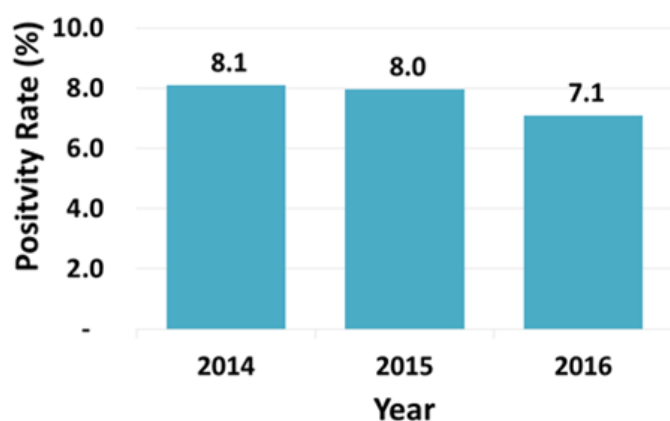




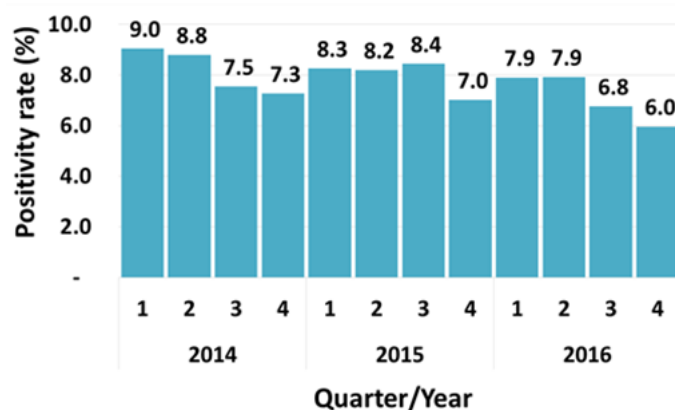
## Malaria positivity rate in pregnant women

The third routine indicator collected to measure malaria burden—**malaria test positivity rate in pregnant women attending an antenatal clinic (ANC)**—provides the measurement of the prevalence of malaria among a selected sentinel population. All pregnant women who are attending an ANC for the first time are eligible to be tested for malaria and to receive appropriate treatment according to the national guidelines. Positivity rate is calculated as a proportion of pregnant women tested for malaria at ANCs who positive for malaria parasites. The malaria positivity rate decreased from 8.1% in 2014 to 7.1% in 2016 (**Figure 3a**). A similar decreasing trend is observed quarterly from 2014 to 2016 (**Figure 3b**). The district malaria positivity rates in pregnant women illustrated in Figure 3c confirm the very low and relatively low positivity rates of less than 1% and 5% respectively, whereas in areas of moderate malaria transmission, the rate ranges from 5–15%. The positivity rate is above 15% in higher malaria transmission areas.

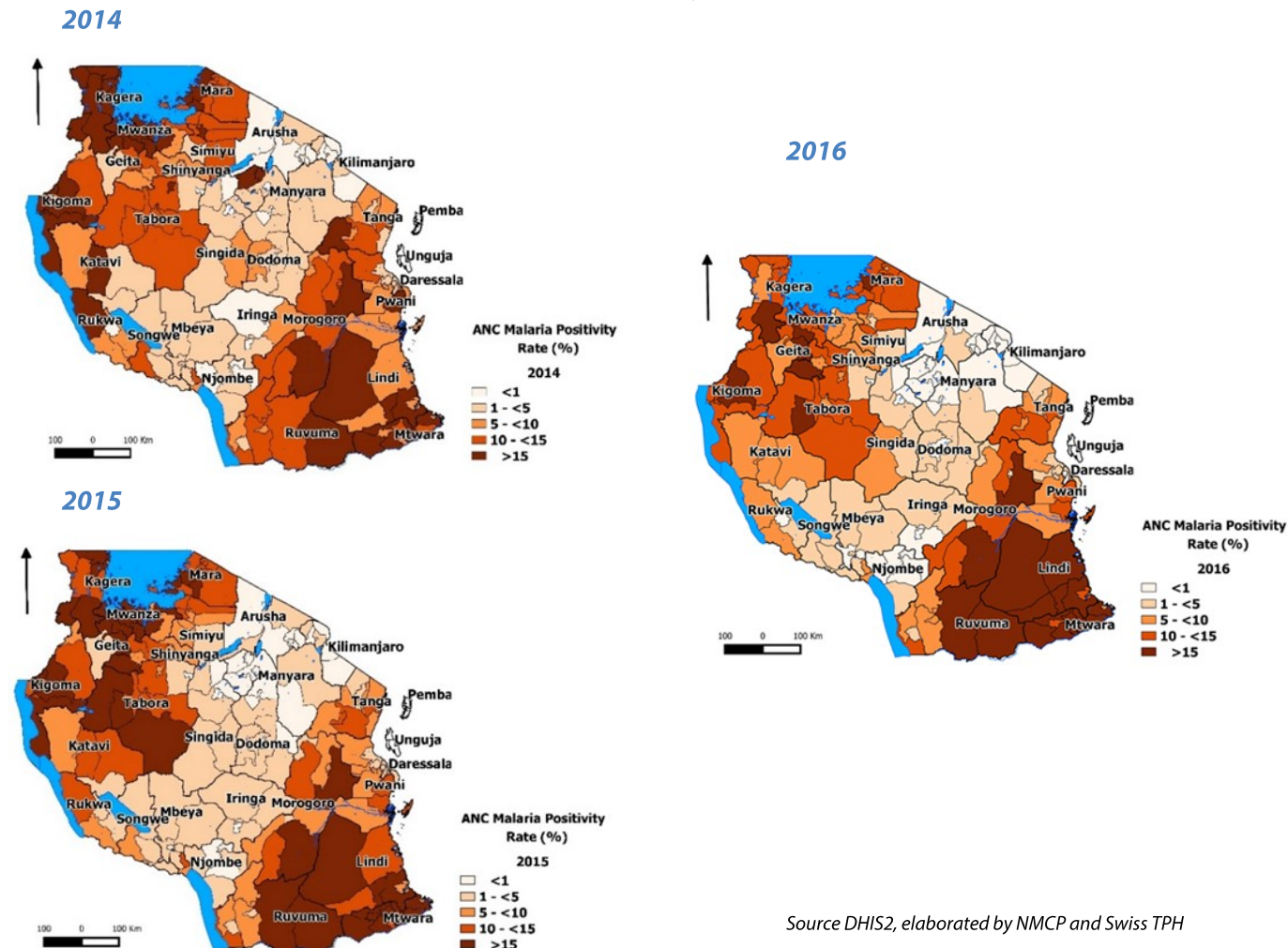
**Figure 3a: Annual malaria positivity rate in pregnant women**



**Figure 3b: Quarterly malaria positivity rate in pregnant women**



**Figure 3c: Annual malaria positivity rate in pregnant women attending ANC**



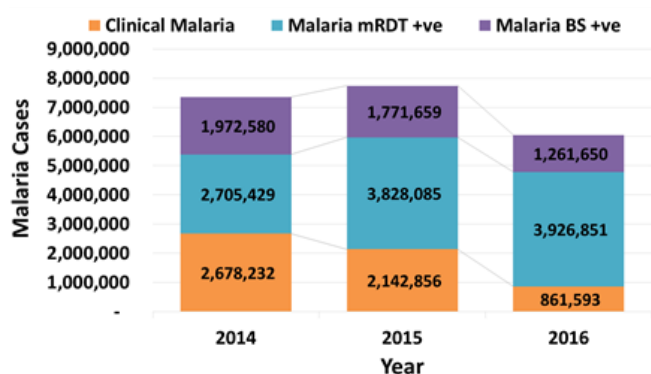
Source DHIS2, elaborated by NMCP and Swiss TPH

## Malaria Services in Out-Patient Departments (OPD)

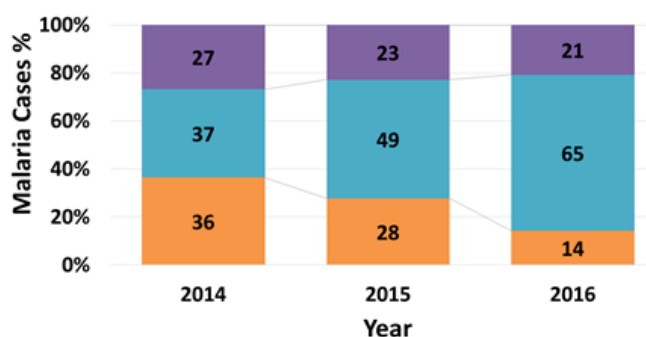
### Uncomplicated malaria diagnosis

The HMIS provides three types of malaria diagnoses: **malaria confirmed** through a positive rapid diagnostic test (mRDT) or blood slide (BS) and clinical malaria for patients not tested. The indicators in **Figure 4a1** and **4b1** show the annual and monthly numbers of malaria cases reported in OPD by type of diagnoses. The annual chart (**Figure 4a1**) shows a marked decrease in malaria diagnosis from 2014 (7,356,421) to 2016 (6,050,094), especially in clinical cases and a relative increase of more than 1 million cases reported by positive mRDT. The monthly reported cases (**Figure 4b1**) demonstrates annual seasonal variations in malaria transmission from April to June. The charts in **Figure 4a2** and **4b2** show the annual and monthly proportions of diagnoses. The monthly proportion of clinical malaria cases decreased from approximately 40% in January 2014 to approximately 10% in December 2016 (**Figure 4b2**). This indicates a gradual increase in adherence to national guidelines that call for testing in all suspected malaria cases. **Figure 4c** shows the regional variation in the proportion of malaria cases in OPD, according to the diagnostic method reported by health facilities. The performance differences between regions that largely adhered to the guidelines (Arusha—approximately 3% clinical malaria cases) and regions that deviated from the national guidelines (Iringa and Ruvuma—35% of patients diagnosed clinically) in 2016 are remarkable.

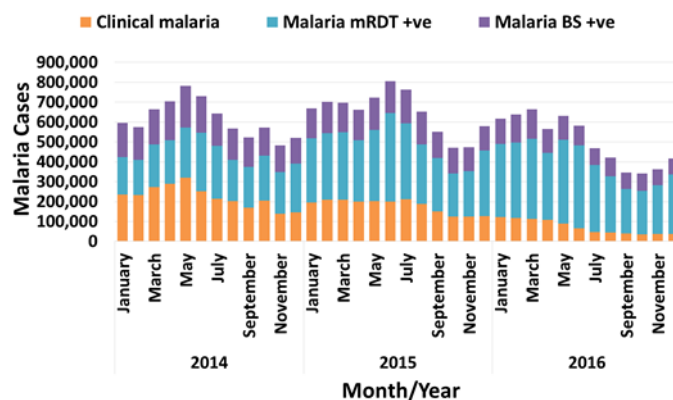
**Figure 4a1: Annual frequency of malaria cases by type of diagnosis 2014 - 2016**



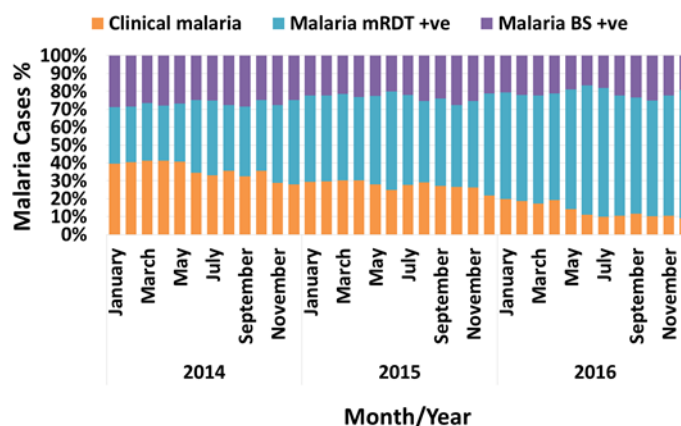
**Figure 4a2: Annual proportion of malaria cases by type of diagnosis 2014-2016**



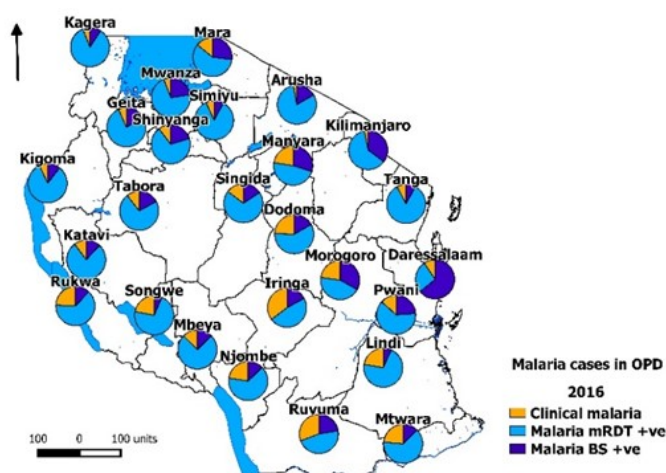
**Figure 4b1: Monthly frequency of malaria cases by type of diagnosis 2014-2016**



**Figure 4b2: Monthly proportion of malaria cases by type of diagnosis 2014-2016**



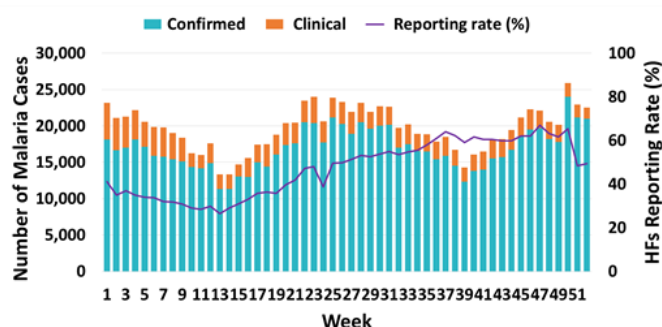
**Figure 4c: Proportion of malaria diagnosis by region -2016**



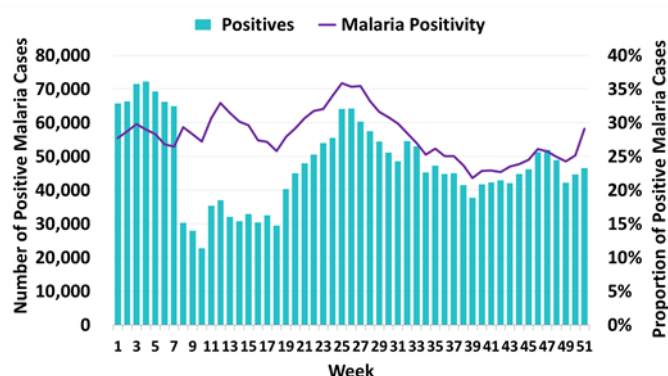
## Weekly malaria morbidity and positivity rate in health facilities

The malaria surveillance, epidemic detection and response system was established to ensure that malaria epidemics are detected and addressed within two weeks of onset. NMCP monitors malaria cases reported weekly via the e-IDSR system. Assigned eIDSR focal persons at each health facility compile and submit data every Monday for each epidemiological week (Monday to Sunday) via a mobile phone. The submitted report goes directly into the District Health Information System (DHIS 2) and can be accessed by officials at district, regional, and national levels. **Figure 5a** shows the weekly numbers and proportion of confirmed and clinical malaria cases reported weekly by health facilities in 2016. There is a trend of increasing reporting rate with the overall reporting rate reaching 70% in week 49. **Figure 5b** shows the number and proportion of positive malaria cases. The proportion of confirmed malaria cases has remained below 30% throughout the year. A malaria epidemic threshold has been set based on a three-week rolling average recommended by the World Health Organization (WHO) for settings without historical data. To date, no alerts have been reported or exceeded this threshold at any health facility. NMCP in collaboration with stakeholders is planning to review available malaria data to determine if there is need to adjust the epidemic thresholds. **Figure 6** shows the malaria cases reported by the managing authority of health facilities.

**Figure 5a: Weekly numbers and reporting rate of malaria cases in 2016**



**Figure 5b: Weekly numbers and proportion of positive malaria cases in 2016**

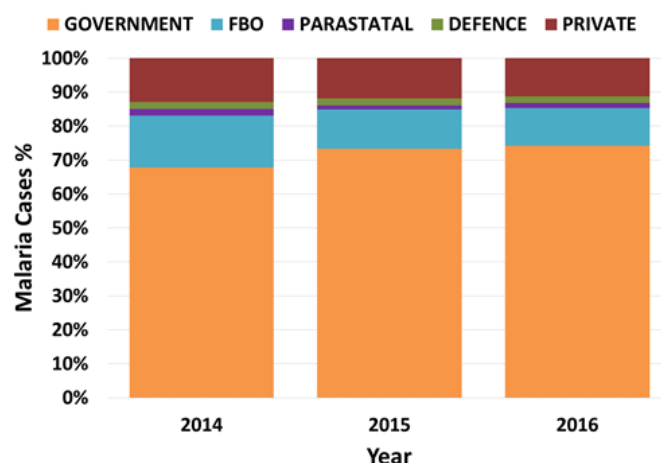


## Diagnosis by managing authority

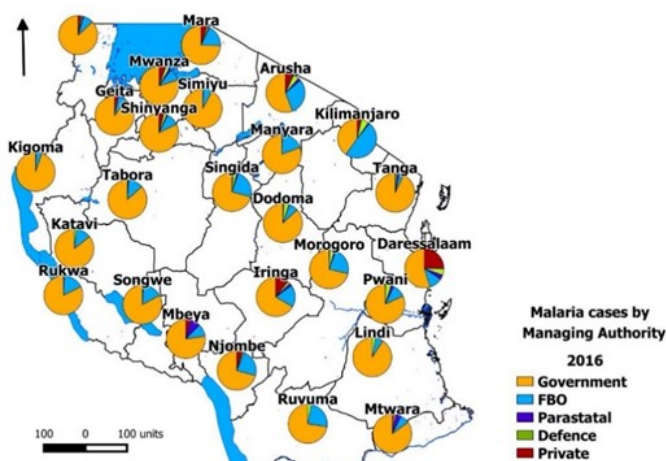
**Figure 6a** and **6b** shows that majority of malaria cases attended public health services. **Figure 6b** show variations by regions.

Almost all regions show similar trends that the majority of malaria cases are managed by public health facilities. Important variations occurred among Tanzanian regions, with some depending largely on private services (e.g., Dar es Salaam) and others depending significantly on faith-based organizations (e.g., Kilimanjaro).

**Figure 6a: Annual proportion of all malaria cases by managing authority**



**Figure 6b: Regional proportion of malaria cases by managing authority – 2016**





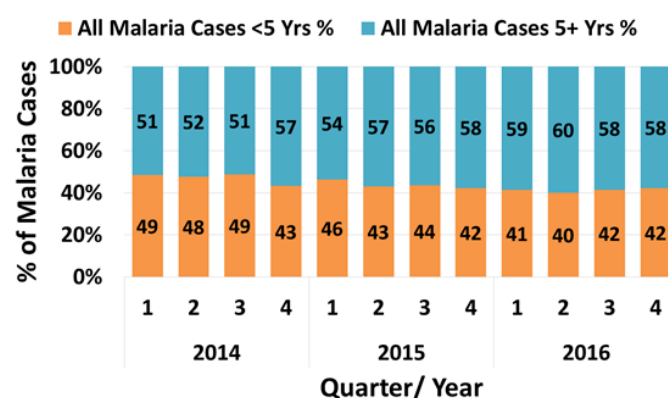
## Malaria diagnosis by age group

**Figure 7** shows proportions of malaria cases by broad age group. These indicators are represented as proportions of each age group and collected from the HMIS/DHIS2. In areas with moderate to high transmission, children below five years of age have relatively lower immunity compared to the rest of the population and are considered to be among the vulnerable population.

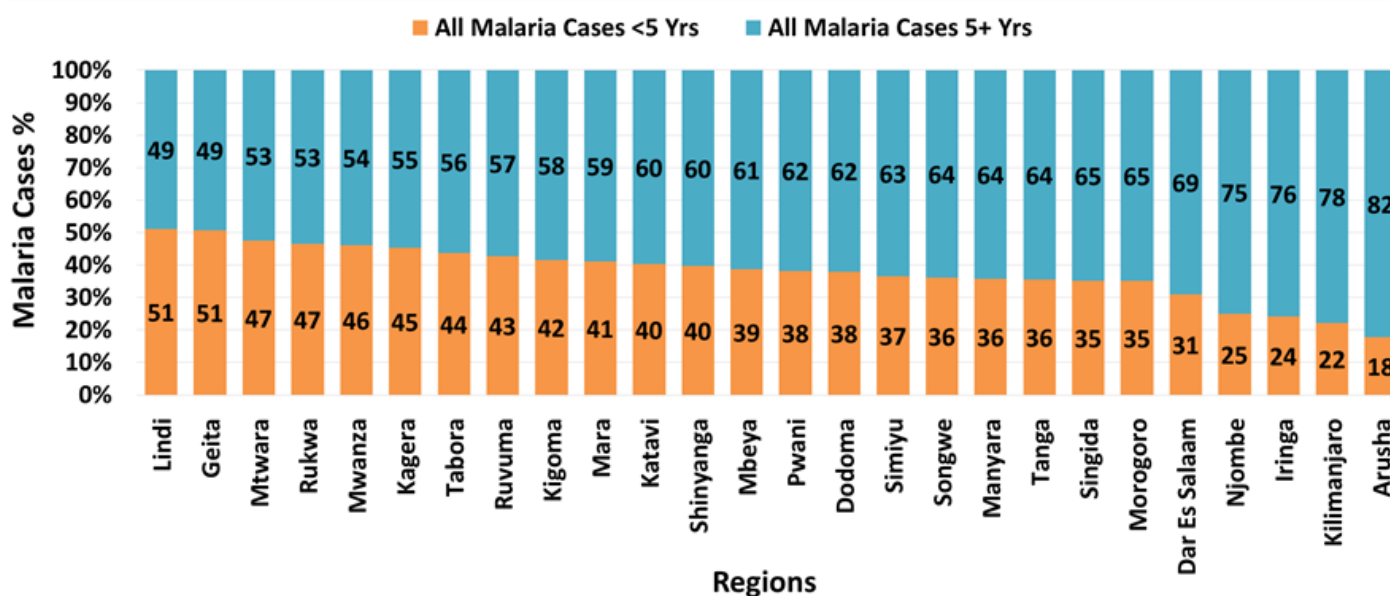
The establishment of partial malaria immunity is directly related to repeated malaria infections. In these areas, people aged five years and older are less likely to get infected or develop symptoms, compared to the vulnerable population. This is why, in areas with high a malaria burden, children under five years of age—that are approximately 20% of the population—represent approximately 50% of the reported cases. In areas with relatively low malaria transmission, the entire population has approximately the same risk to be infected and develop a symptomatic disease.

There is a progressive decline in the proportion of children under the age of five who were diagnosed with malaria between the first quarters of 2014—just below 50%—to 2016—just above 40% (**Figure 7a**). Much higher levels of variation can be seen in the regional distribution shown in **Figure 7b**. Regions with demonstrated high transmission—such as Geita, in the northwest of Tanzania and Lindi, in the southwest—reported that more than 50% of malaria cases are among the children under five years of age. On the other hand, in the regions with evidence of extremely low transmission—such as Arusha, Kilimanjaro, Iringa and Njombe—the proportion of children reported with malaria is between 18% and 25%. In these cases, almost all the entire population can be considered to have low immunity to malaria and to be highly vulnerable to malaria resurgence or outbreaks. This striking difference reflects the high heterogeneity of malaria transmission in Tanzania.

**Figure 7a: Annual proportion of malaria cases by age group**



**Figure 7b: Regional proportion of malaria cases by age group for 2016**



## Malaria Testing

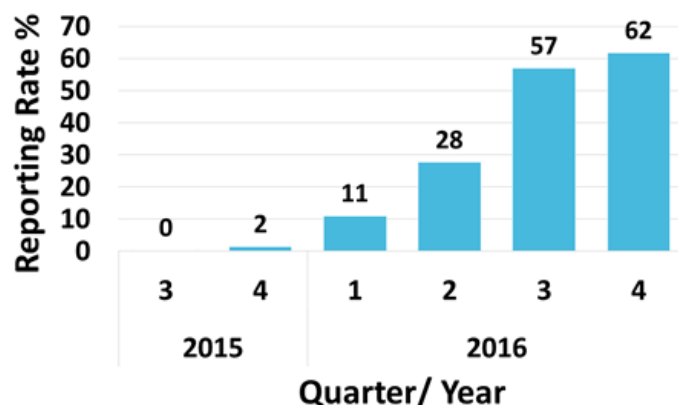
This indicator shows the laboratory reporting rates of malaria tests performed in health facilities in the defined period. It is calculated by dividing the number of lab reports received in the reporting period by the expected number of monthly laboratory reports in the reporting period.

The national guidelines recommends to test all patients who present to an OPD with fever for malaria. The test is performed using microscopy or by using rapid diagnostic tests. In the last quarters of 2015, new tools have been added to the standard HMIS to report malaria testing and its outcomes.

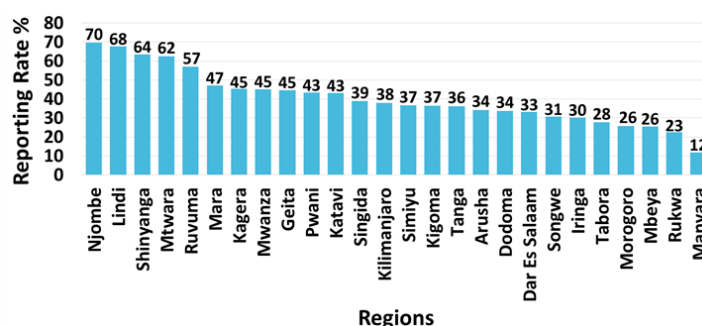
The new tools—including register, tally sheets and monthly summary forms—were scaled out in 2016. In the last quarter of 2016, 62% of health facilities reported malaria testing (**Figure 8a**), with important variation among the regions. Only five regions have more than 50% of facilities reporting (Njombe, Lindi, Shinyanga, Mtwara and Ruvuma) (**Figure 8b**).

Owing to the limited information, it is too early to report testing outcomes, and this will be deferred to later issues of the bulletin.

**Figure 8a: Quarterly malaria test reporting rate**



**Figure 8b: Malaria test reporting rate by region for 2016**



## Antimalarial dispensing

The national guidelines recommend that patients who test positive for malaria be treated with an appropriate antimalarial drug. The recommended antimalarial in Tanzania is Artemether Lumefantrine (ALu), which is available in 4 presentations with blisters of 6, 12, 18, and 24 tablets that are dispensed according to the body weight of the patients.

In the last quarters of 2015, new tools have been added to the standard HMIS to report dispensing of tracer medicines in health facilities, among them ALu. The new tools—including register, tally sheets and monthly summary forms—have been scaled out in 2016. In the last quarter of 2016, only 26% of health facilities reported dispensing antimalarial medicine (**Figure 9a**) with important variations among the regions showing the roll out status. Only 1 region has more than 50% of facilities reporting (Lindi) (see **Figure 9b**). Due to the limited information and the slow pace of roll out, it is too early to report antimalarial dispensing outcomes and this will be deferred to the following bulletins.

**Figure 9a: Quarterly reporting rate of ALU dispensed**

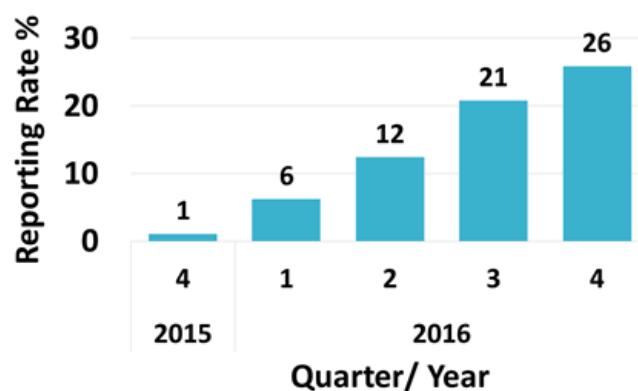
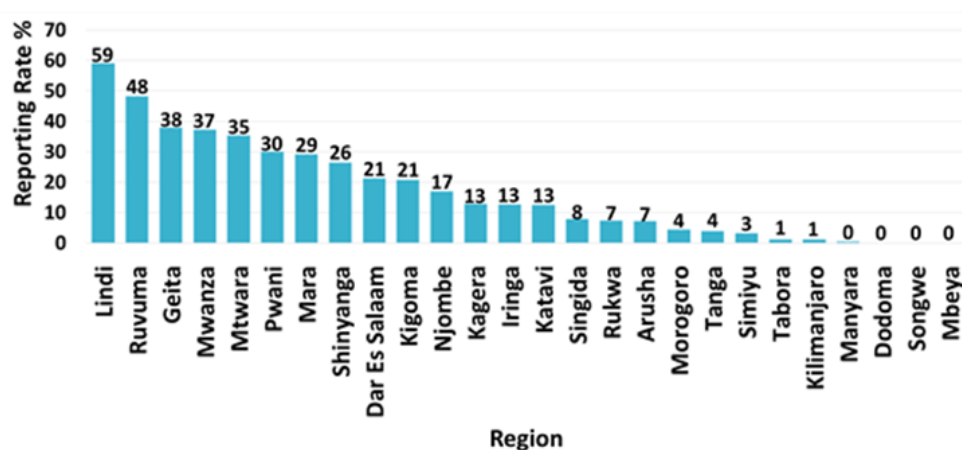




Figure 9b: Reporting rate of ALU dispensed by region for 2016



## Severe Malaria Management in Inpatient Department

### Pattern of severe malaria diagnosis

Figure 10a1 and b1 shows the total number of malaria cases by type of diagnosis per year and month, respectively. Figure 10a2 and b2 shows the proportion of malaria cases by type of diagnosis per year and month, respectively. Generally, the findings show that there was a decrease in clinical malaria from 2014 to 2016.

Figure 10a1: Annual frequency of malaria admissions

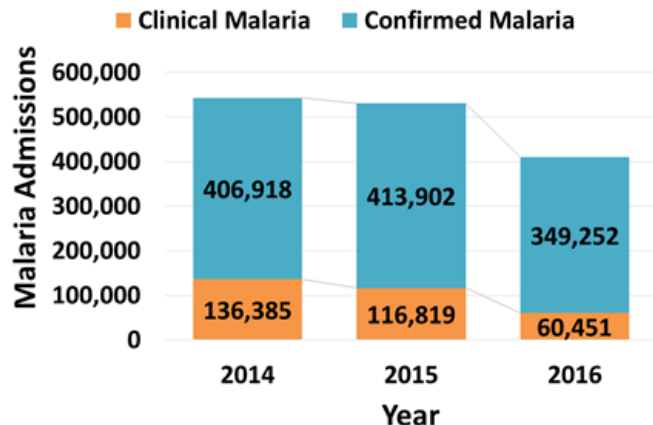


Figure 10a2: Annual proportion of malaria admissions

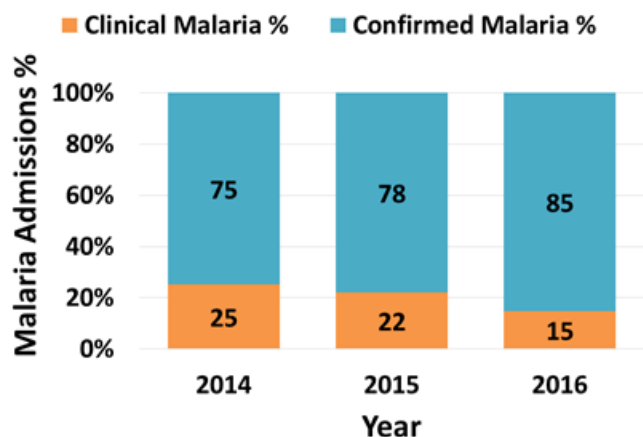


Figure 10b1: Monthly frequency of malaria admissions

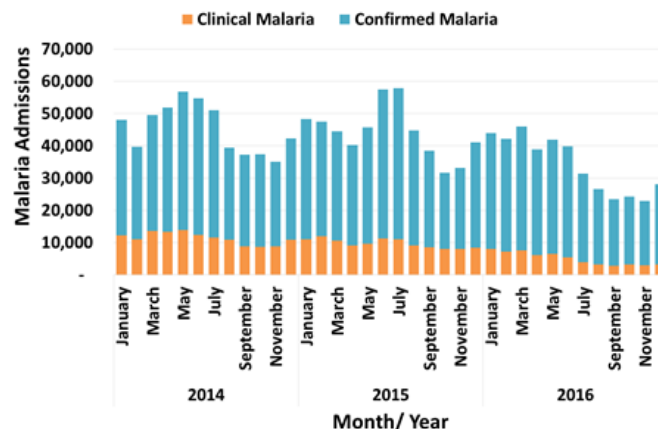
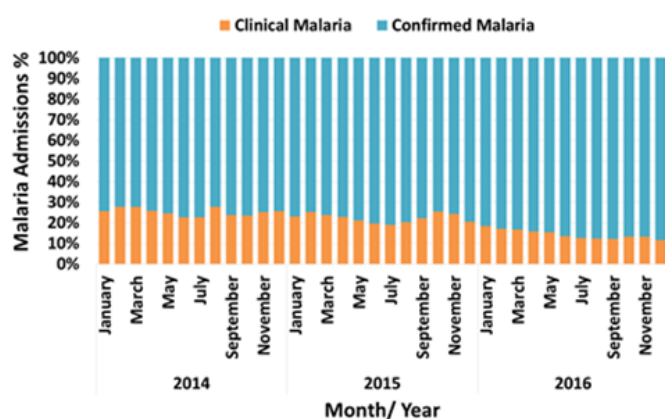


Figure 10b2: Monthly proportion of malaria admissions



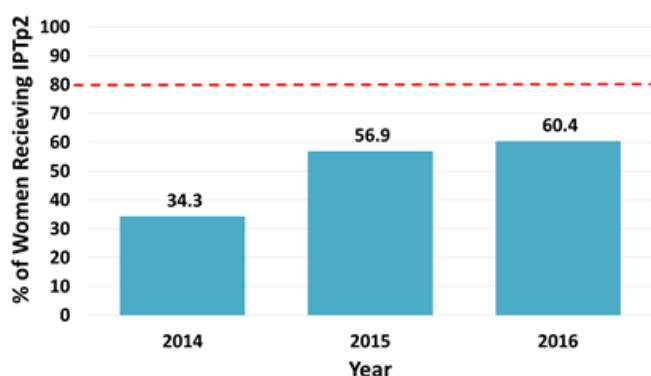
## Malaria Services in RCH Clinic

### IPTp2 performance

Uptake of intermittent preventive treatment in pregnancy (IPTp) with Sulfadoxine-Pyrimethamine (SP) continues to be the major malaria prevention intervention among pregnant women together with the use of long lasting insecticide treated nets (LLIN). Pregnant women attending ANC services are eligible to receive a complete dose of SP as preventive therapy as soon as they reach the second trimester of their pregnancy (12 weeks of gestational age). Other SP doses are administered in the subsequent scheduled visits provided there is an interval of 4 weeks between one administration and the other. **Figure 11a** and **11b** shows the annual and monthly proportions of women receiving IPTp2 during ANC visits.

The proportion is measured by dividing the number of pregnant women receiving the second dose of SP by the number of pregnant women that attended the facility for the first time. The results show that there is a progressive increase in IPTp2 uptake from 34.3% in 2014 to 60.4% in 2016 (**Figure 11a**). Similarly, the monthly reported IPTp2 uptake (**Figure 11b**) demonstrates an overall scale-up of the performance of IPTp2 uptake. **Figure 11c** shows the district variation of IPTp2 uptake during ANC visits. In 2016, the lowest regional uptake was seen in Tabora region (31%), while the highest was in Kilimanjaro (91%). Some of the factors that might explain the low IPTp2 uptake in some regions include frequent SP stock outs and late antenatal booking by pregnant women.

**Figure 11a: Annual IPTp2 performance**

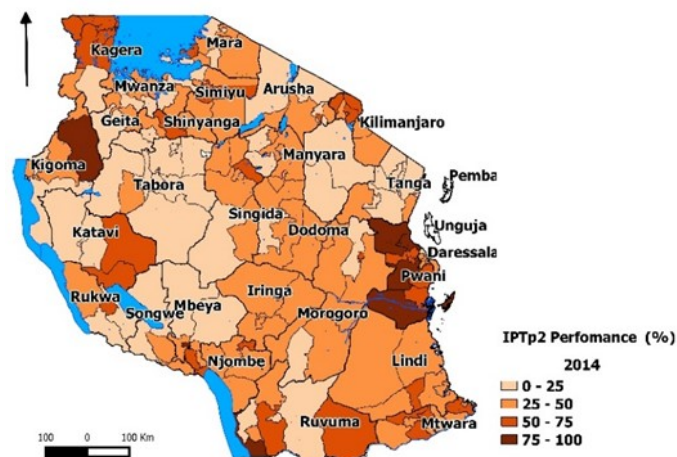


**Figure 11a: Annual IPTp2 performance**

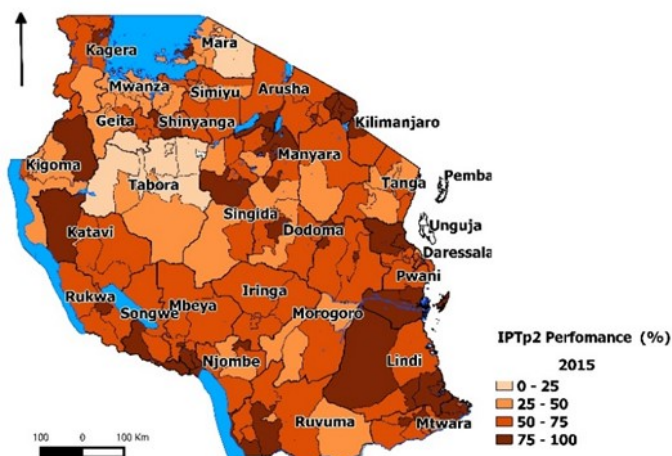


**Figure 11c: IPTp2 performances by district (%)**

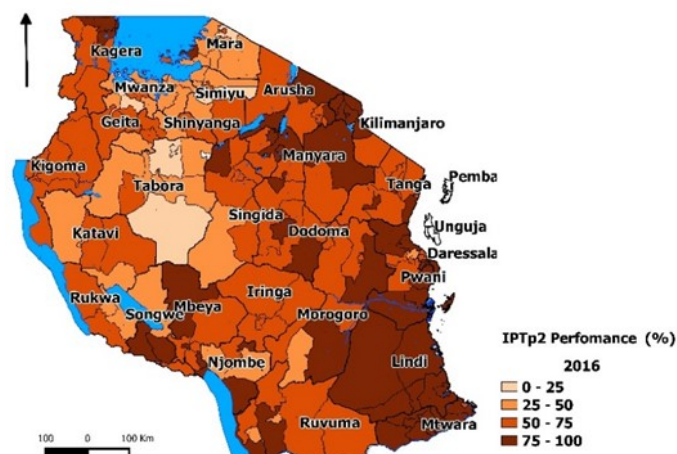
**2014**



**2015**



**2016**



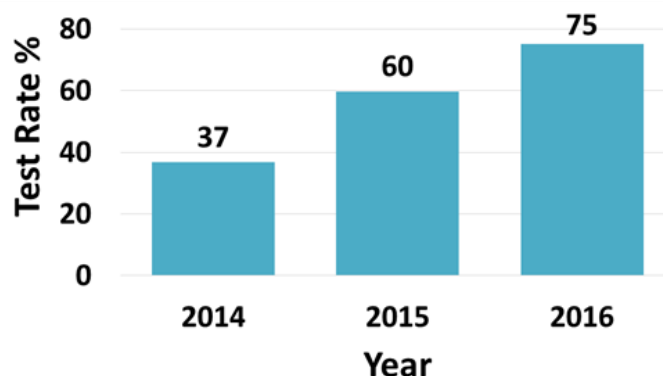
## ANC malaria testing rate

Every pregnant woman is tested for malaria during the first ANC visit, according to the current national malaria guidelines. The indicator is measured by dividing the number of pregnant women tested by the number of pregnant women attending the clinic for the first time. **Figure 12a** shows increased malaria test rate among pregnant women seeking ANC services from 2014 to 2016.

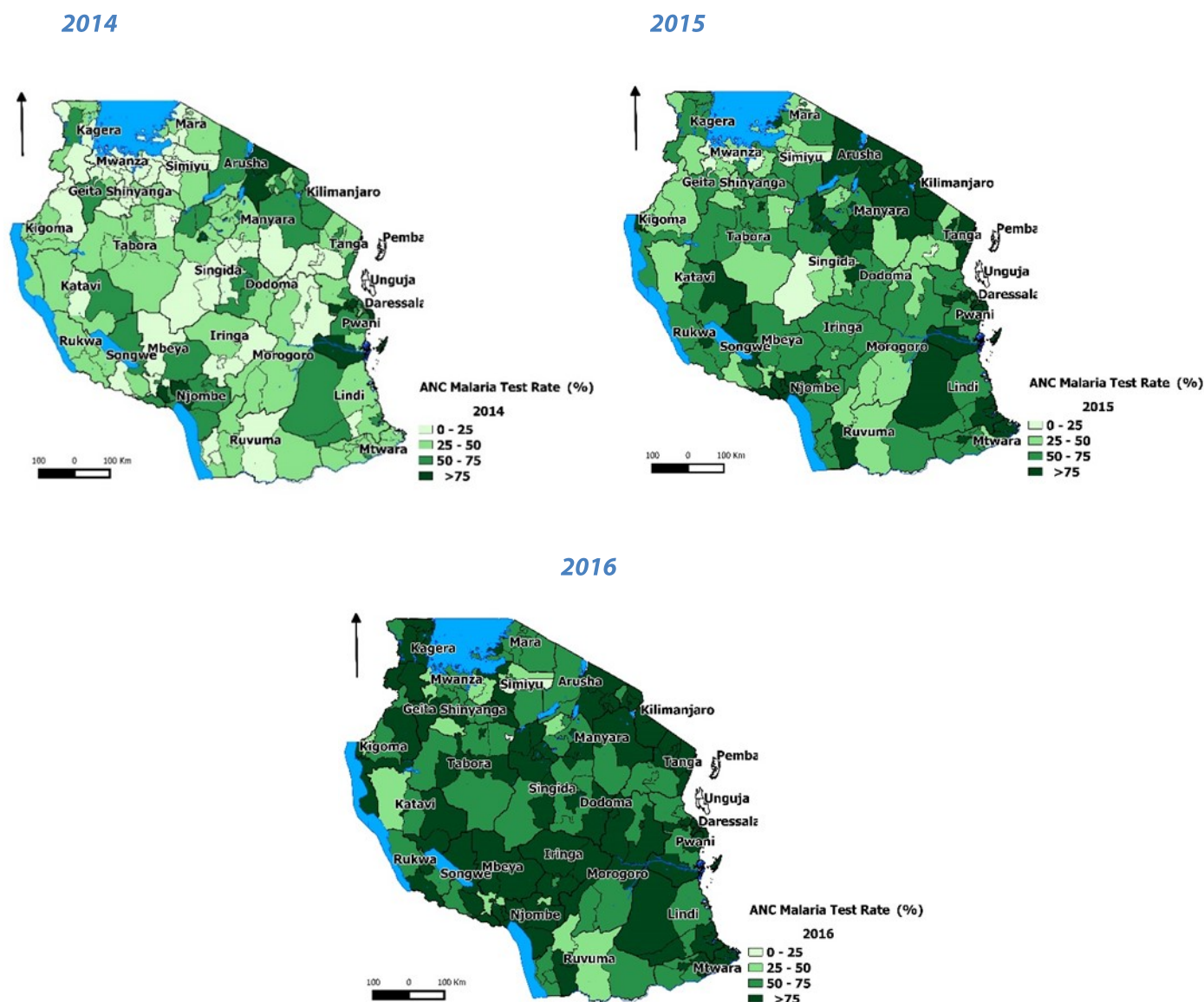
The malaria test rates among pregnant women is about to reach the national target of 80%. **Figure 12b** shows variation in test rate by district for the period 2014 - 2016.

There is a trend of increasing test rate in the districts. In 2016, the lowest regional test rate of 55% was seen in Mwanza region and the highest in Kilimanjaro with test rate of 97%.

**Figure 12a: Annual testing rate**



**Figure 12b: Malaria testing rate by district**





## Appendix

This section provides a general overview in terms of the number and proportion of malaria cases in OPD for the period 2015–2016 across all districts of Mainland Tanzania.

**Table 1: Numbers and proportion of Malaria cases in OPD for the period 2015–2016**

Region	Council	2015			2016		
		Confirmed Malaria Cases	Clinical Malaria Cases	% of Malaria Cases / OPD Visits	Confirmed Malaria Cases	Clinical Malaria Cases	% of Malaria Cases / OPD Visits
Arusha	Arusha CC	4,239	1,695	1	1,942	105	0
	Arusha DC	1,923	606	2	904	0	1
	Karatu DC	1,369	20	1	1,121	0	1
	Longido DC	167	72	1	144	16	0
	Meru DC	1,006	0	1	758	0	0
	Monduli DC	1,684	80	1	673	9	1
	Ngorongoro DC	965	1101	2	665	57	1
Total		11,353	3574	1	6,207	187	0.004
Dar es Salaam	Ilala MC	141,843	10,908	10	110,574	11,501	7
	Kigamboni MC	23,162	2,055	11	19,273	2,841	11
	Kinondoni MC	147,107	28,291	14	147,376	21,562	10
	Temeke MC	147,768	15,934	14	100,030	7,334	10
	Ubungu MC	111,362	12,531	20	87,591	5,527	12
Total		571,242	69,719	13	464,844	48,765	9
Dodoma	Bahi DC	17,137	15,819	23	12,332	2,752	12
	Chamwino DC	32,944	19,730	20	23,581	8,139	13
	Chemba DC	7,454	2,752	9	5,947	1,261	6
	Dodoma MC	42,288	29,482	16	17,740	13,463	6
	Kondoa DC	3,613	2,594	9	2,219	1,564	5
	Kondoa TC	3,031	805	9	852	70	2
	Kongwa DC	13,273	7,260	12	13,032	1,985	8
	Mpwawwa DC	13,672	3,156	8	14,523	134	8
Total		133,412	81,598	15	90,226	29,368	8
Geita	Bukombe DC	32,358	11,852	46	29,511	1,503	26
	Chato DC	60,842	21,134	47	44,061	3,620	25
	Geita DC	62,902	29,816	46	82,260	6,855	34
	Geita TC	19,645	3,539	29	20,044	1,611	18
	Mbogwe DC	29,061	5,719	42	37,048	470	36
	Nyang'hwale DC	28,522	4,505	70	31,293	3,089	52
Total		233,330	76,565	45	244,217	17,148	30
Iringa	Iringa DC	7,593	8,936	8	8,333	3,104	6
	Iringa MC	8,593	11,973	14	6,025	4,642	6
	Kilolo DC	9,909	8,985	11	11,156	4,384	8
	Mafinga TC	1,618	1,930	6	1,272	1,556	4
	Mufindi DC	4,258	6,051	9	4,151	3,211	5
Total		31,971	37,875	10	30,937	16,897	6
Kagera	Biharamulo DC	59,012	11,366	40	54,790	3,123	34
	Bukoba DC	61,485	13,860	48	30,127	716	19
	Bukoba MC	10,130	4,481	6	6,504	1,277	3
	Karagwe DC	46,005	26,262	45	41,130	14,652	33
	Kyerwa DC	33,236	6,889	38	51,284	3,338	33
	Missenyi DC	58,116	10,764	44	32,807	1,522	22
	Muleba DC	48,773	16,783	30	73,768	855	26
	Ngara DC	111,737	10,775	41	128,928	1,459	39
Total		428,494	101,180	35	419,338	26,942	26
Katavi	Mlele DC	5,265	287	71	6,210	484	21
	Mpanda DC	19,129	5,108	42	11,708	1,461	27
	Mpanda MC	31,792	12,003	38	18,524	2,529	21
	Mpimbwe DC	4,168	2,445	23	2,554	1,545	18
	Nsimbo DC	30,005	4,523	49	20,585	764	34
Total		90,359	24,366	41	59,581	6,783	25

**Table 1: Numbers and proportion of Malaria cases in OPD for the period 2015–2016 *continued***

Region	Council	2015			2016		
		Confirmed Malaria Cases	Clinical Malaria Cases	% of Malaria Cases / OPD Visits	Confirmed Malaria Cases	Clinical Malaria Cases	% of Malaria Cases / OPD Visits
Kigoma	Buhigwe DC	33,854	13,130	38	46,890	2,846	41
	Kakonko DC	17,356	17,328	69	47,703	7,318	56
	Kasulu DC	45,899	15,127	42	57,104	2,021	36
	Kasulu TC	20,472	3,876	21	20,615	6,523	20
	Kibondo DC	84,949	30,211	54	94,248	3,410	40
	Kigoma DC	78,119	18,965	57	50,813	2,146	35
	Kigoma MC	42,617	5,742	35	42,232	2,988	26
	Uvinza DC	57,181	15,182	44	47,014	2,604	30
Total		380,447	119,561	45	406,619	29,856	35
Kilimanjaro	Hai DC	2,173	3,325	3	865	50	0
	Moshi DC	1,356	92	1	1,247	5	0
	Moshi MC	12,559	587	4	6,704	161	2
	Mwanga DC	3,586	493	3	2,217	6	2
	Rombo DC	615	52	0	483	4	0
	Same DC	5,071	946	3	2,788	235	2
	Siha DC	507	577	1	311	6	0
Total		25,867	6,072	2	467	14,615	1
Lindi	Kilwa DC	29,878	13,514	45	45,635	14,039	43
	Lindi DC	38,731	20,189	34	61,015	12,436	38
	Lindi MC	28,774	6,106	31	33,968	4,919	31
	Liwale DC	28,019	5,257	42	37,003	11,458	40
	Nachingwea DC	25,631	22,794	39	40,035	4,055	30
	Ruangwa DC	23,939	11,938	31	38,402	26,751	40
Total		174,972	79,798	36	256,058	73,658	37
Manyara	Babati DC	9,485	27,884	19	5,704	3,681	5
	Babati TC	4,582	4,937	10	1,202	247	1
	Hanang DC	984	1,736	3	583	71	1
	Kiteto DC	11,605	4,626	16	8,871	311	9
	Mbulu DC	3,117	6,409	8	2,028	1,107	2
	Mbulu TC	2,453	4,456	12	713	371	2
	Simanjiro DC	9,718	3,084	12	3,731	860	5
Total		41,944	53,132	12	22,832	6,648	4
Mara	Bunda DC	28,705	15,780	50	19,141	4,728	29
	Bunda TC	26,942	15,566	45	17,014	10,404	31
	Butiama DC	65,068	9,534	56	32,531	5,766	34
	Musoma DC	73,163	9,388	45	23,268	34	15
	Musoma MC	42,874	8,592	27	36,048	2,781	22
	Rorya DC	25,330	10,863	50	59,267	9,178	57
	Serengeti DC	43,280	17,504	40	50,706	7,843	38
	Tarime DC	27,845	10,373	41	33,062	6,022	38
	Tarime TC	19,582	3,895	41	19,226	1,320	30
Total		352,789	101,495	43	290,263	48,076	32
Mbeya	Busokelo DC	19,743	670	12	10,409	294	9
	Chunya DC	7,106	3,278	15	10,235	1,001	13
	Kyela DC	55,792	4,714	32	27,109	818	18
	Mbarali DC	3,165	3,970	5	3,016	744	2
	Mbeya CC	10,238	7,179	7	6,628	5,096	4
	Mbeya DC	3,405	1,104	6	3,293	699	4
	Rungwe DC	11,497	1,899	10	8,235	1,261	8
Total		110,946	22,814	13	68,925	9,913	7
Morogoro	Gairo DC	3,948	7,253	18	5,748	3,117	15
	Ifakara TC	6,194	954	20	13,484	5,358	26
	Kilombero DC	33,868	8,922	41	31,930	4,231	27
	Kilosa DC	67,735	35,373	39	58,069	11,665	26
	Malinyi DC	19,456	10,064	48	18,721	4,771	35
	Morogoro DC	75,004	53,480	49	49,717	26,116	40
	Morogoro MC	86,762	28,681	24	70,703	12,434	15
	Mvomero DC	45,524	34,613	45	9,740	3,547	35
	Ulanga DC	30,726	41,588	51	31,949	14,393	31
Total		369,217	220,928	37	290,061	85,632	24

Table 1: Numbers and proportion of Malaria cases in OPD for the period 2015–2016 *continued*

Region	Council	2015			2016		
		Confirmed Malaria Cases	Clinical Malaria Cases	% of Malaria Cases / OPD Visits	Confirmed Malaria Cases	Clinical Malaria Cases	% of Malaria Cases / OPD Visits
Mtwara	Masasi DC	56,237	34,066	37	62,326	28,965	35
	Masasi TC	31,291	12,475	31	39,718	4,137	34
	Mtwara DC	34,779	12,179	39	45,245	15,202	48
	Mtwara MC	23,403	1,910	28	35,005	1,595	24
	Nanyamba TC	21,991	13,878	45	32,431	15,030	56
	Nanyumbu DC	47,973	22,732	50	45,956	18,099	50
	Newala DC	22,144	11,524	58	38,143	2,597	50
	Newala TC	19,327	8,275	27	25,439	1,637	27
	Tandahimba DC	39,933	36,763	47	51,424	28,782	43
Total		297,078	153,802	40	375,687	116,044	39
Mwanza	Buchosa DC	52,430	35,802	81	32,322	1,568	27
	Ilemela MC	49,994	9,738	37	32,334	1593	21
	Kwimba DC	63,062	32,862	48	35,048	2,752	22
	Magu DC	42,589	21,112	33	33,014	1,503	19
	Misungwi DC	45,452	21,313	45	39,605	3,616	29
	Nyamagana MC	53,068	8,569	18	40,322	2,262	13
	Sengerema DC	81,391	51,891	56	47,326	1,695	20
	Ukerewe DC	24,935	17,187	47	46,977	4,155	44
Total		412,921	198,474	41	306,948	19,144	22
Njombe	Ludewa DC	10,654	4,461	20	9,637	2,887	13
	Makambako TC	1,141	20	2	1,481	8	2
	Makete DC	1,000	1,377	4	475	282	1
	Njombe DC	1,387	749	5	850	54	2
	Njombe TC	2,287	1,215	3	2,419	317	3
	Wanging'ombe DC	1,586	2,680	6	991	1,071	2
Total		18,055	10,502	7	15,853	4,619	4
Pwani	Bagamoyo DC	19,761	5,019	25	15,080	997	13
	Chalinze DC	73,582	23,993	40	80,460	14,095	39
	Kibaha DC	41,978	6,709	34	24,200	1,556	21
	Kibaha TC	23,210	6,290	17	21,698	3,398	12
	Kibiti DC	43,154	7,731	40	38,077	7,533	34
	Kisarawe DC	38,203	24,486	53	31,313	8,653	31
	Mafia DC	29,199	3,120	41	19,924	1,044	28
	Mkuranga DC	65,507	15,676	45	55,421	6,781	35
	Rufiji DC	36,050	8,191	39	33,755	5,238	27
Total		370,644	101,215	37	319,928	49,295	27
Rukwa	Kalambo DC	23,055	10,090	33	19,079	6,024	29
	Nkasi DC	45,398	6,234	35	24,619	4,060	20
	Sumbawanga DC	15,518	11,080	26	10,632	5,497	16
	Sumbawanga MC	16,841	10,605	15	10,827	5,279	11
Total		100,812	38,009	26	65,157	20,860	18
Ruvuma	Madaba DC	7,685	6,044	31	8,684	6,654	32
	Mbinga DC	24,152	13,341	32	28,801	8,255	38
	Mbinga TC	11,857	4,321	23	13,978	2,226	25
	Namtumbo DC	46,132	37,425	76	66,787	29,123	54
	Nyasa DC	25,030	8,761	62	33,171	4,653	57
	Songea DC	16,408	10,806	38	22,751	21,253	39
	Songea MC	44,760	14,833	32	47,225	12,955	34
	Tunduru DC	64,275	29,282	43	58,189	39,162	41
Total		240,299	124,813	42	279,586	124,281	41
Shinyanga	Kahama TC	42,538	14,437	38	40,742	758	23
	Kishapu DC	37,309	19,813	25	28,130	1,371	15
	Msalala DC	33,212	10,303	40	32,327	1,688	27
	Shinyanga DC	56,020	19,146	46	35,202	9,077	32
	Shinyanga MC	45,036	5,558	33	35,104	1,193	16
	Ushetu DC	23,063	23,753	41	39,365	9,971	33
Total		237,178	93,010	36	210,870	24,058	23



**Table 1: Numbers and proportion of Malaria cases in OPD for the period 2015–2016 *continued***

Region	Council	2015			2016		
		Confirmed Malaria Cases	Clinical Malaria Cases	% of Malaria Cases / OPD Visits	Confirmed Malaria Cases	Clinical Malaria Cases	% of Malaria Cases / OPD Visits
Simiyu	Bariadi DC	30,511	14,502	42	21,959	594	19
	Bariadi TC	17,034	5,993	26	14,172	1,949	17
	Busega DC	16,169	12,056	56	20,592	108	21
	Itilima DC	18,606	18,728	33	13,633	1,801	16
	Maswa DC	27,602	7,602	24	31,360	532	20
	Meatu DC	27,016	8,671	22	11,025	3,182	12
Total		136,938	67,552	31	112,741	8,166	18
Singida	Ikungi DC	13,974	10,270	13	11,064	1,997	7
	Iramba DC	9,131	10,767	9	10,071	1,870	7
	Itigi DC	14,631	11,171	27	11,282	1,971	14
	Manyoni DC	18,202	14,446	19	20,151	2,374	15
	Mkalama DC	5,204	1,594	4	4,521	547	4
	Singida DC	4,562	3,151	6	1,996	1,319	3
	Singida MC	7,102	4,090	7	4,873	948	3
Total		72,806	55,489	11	63,958	11,026	7
Songwe	Ileje DC	6,115	951	10	3,945	270	7
	Mbozi DC	4,487	2,197	3	3,146	1,737	2
	Momba DC	17,892	6,552	31	9,368	4,379	20
	Songwe DC	8,325	2,689	15	7,150	354	11
	Tunduma TC	1,642	879	8	1,013	216	3
Total		38,461	13,268	11	24,622	6,956	7
Tabora	Igunga DC	45,792	29,620	33	44,235	13,931	26
	Kaliua DC	42,309	23,525	42	35,515	10,120	32
	Nzegga DC	60,309	32,068	46	78,456	3,222	40
	Nzegga TC	16,522	4,084	62	17,114	514	52
	Sikonge DC	49,820	25,523	51	45,456	3,428	36
	Tabora MC	47,798	12,727	40	63,328	1,567	26
	Urambo DC	36,794	27,220	60	41,372	1,853	43
	Uyui DC	59,408	22,490	47	83,846	13,686	47
Total		358,752	177,257	45	409,322	48,321	35
Tanga	Bumbuli DC	7,921	7,325	17	7,714	0	9
	Handeni DC	44,725	22,633	43	65,052	4,194	36
	Handeni TC	15,801	2,303	37	11,522	575	25
	Kilindi DC	32,400	20,349	44	56,612	3,225	45
	Korogwe DC	32,135	14,842	43	40,961	13,202	42
	Korogwe TC	14,810	1,645	21	8,337	131	11
	Lushoto DC	13,474	8,793	17	9,857	1,388	8
	Mkinga DC	43,770	10,283	51	29,918	1,414	28
	Muheza DC	87,033	9,205	32	66,741	1,700	28
	Pangani DC	16,101	8,144	26	12,388	273	14
	Tanga CC	51,287	5,266	12	30,004	2,381	7
Total		359,457	110,788	28	339,106	28,483	21

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