



# Malaria Surveillance Bulletin

Division of National Malaria Program.

Issue 29 April – June 2019



The **MALARIA SURVEILLANCE BULLETIN** is produced by the Division of National Malaria Program and is a quarterly production.

## EDITORIAL TEAM

### PROGRAM MANAGER

Dr. Grace Ikahu Muchangi

### EDITORS

Dr. Ahmeddin Omar  
James Kiarie

### CONTACT

Ministry of Health  
National Malaria Control  
Program  
P.O. Box 19982 -00202  
KNH, Nairobi

Tel: (020) 2716934  
Fax: (020) 2716935

Website: <http://www.nmcp.or.ke/>

Twitter: [@nmcpkenya](https://twitter.com/nmcpkenya)

Facebook:  
<https://www.facebook.com/nmcpkenya>

## Message from the Program Manager

Kenya's malaria heterogenous malaria epidemiological profile is as a result of varying ecological and climatic patterns. Malaria interventions such as use of LLINs, IRS and LSM is expected to yield reduced malaria cases. With heightened surveillance trainings in the country coupled with the recent review of HIS tools will result in an improved surveillance system and enhanced demand and use of data / information for decision making.

In this quarter, we witnessed the launch of the new Kenya Malaria Strategy (2019-2023) as well as the Monitoring and Evaluation plan (2019-2023) in an event which was coupled with the commemoration of the World Malaria Day on the 25<sup>th</sup> April 2019 in Siaya county.

This quarterly issue of the malaria surveillance bulletin focuses on performance of malaria indicators during the last quarter of the financial year 2019/2020.

We encourage Counties to develop their own surveillance bulletin so as to use data to plan/target the interventions.



## Malaria Indicators performance

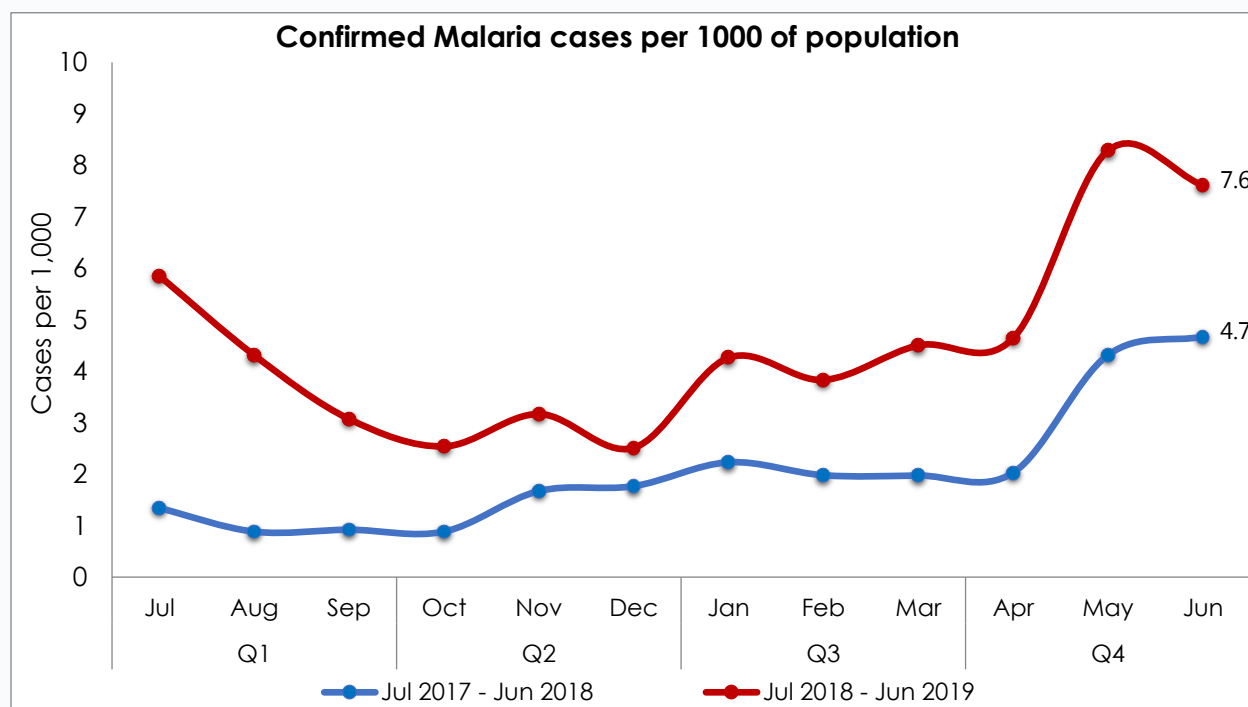
### 1. Malaria Incidence Rate

This is the number of confirmed malaria cases identified by the surveillance system expressed as a proportion of the population at risk (per 1,000 population)

Figure 1a: The number of outpatient confirmed malaria cases per 1000 people resident in Kenya.

#### Figure 1a: Number of Outpatient Confirmed Malaria Cases per 1,000 Population

During this quarter, the number of confirmed malaria cases reported in health facilities per thousand persons in the population increased from 4.6 to 7.6.



Source: DHIS

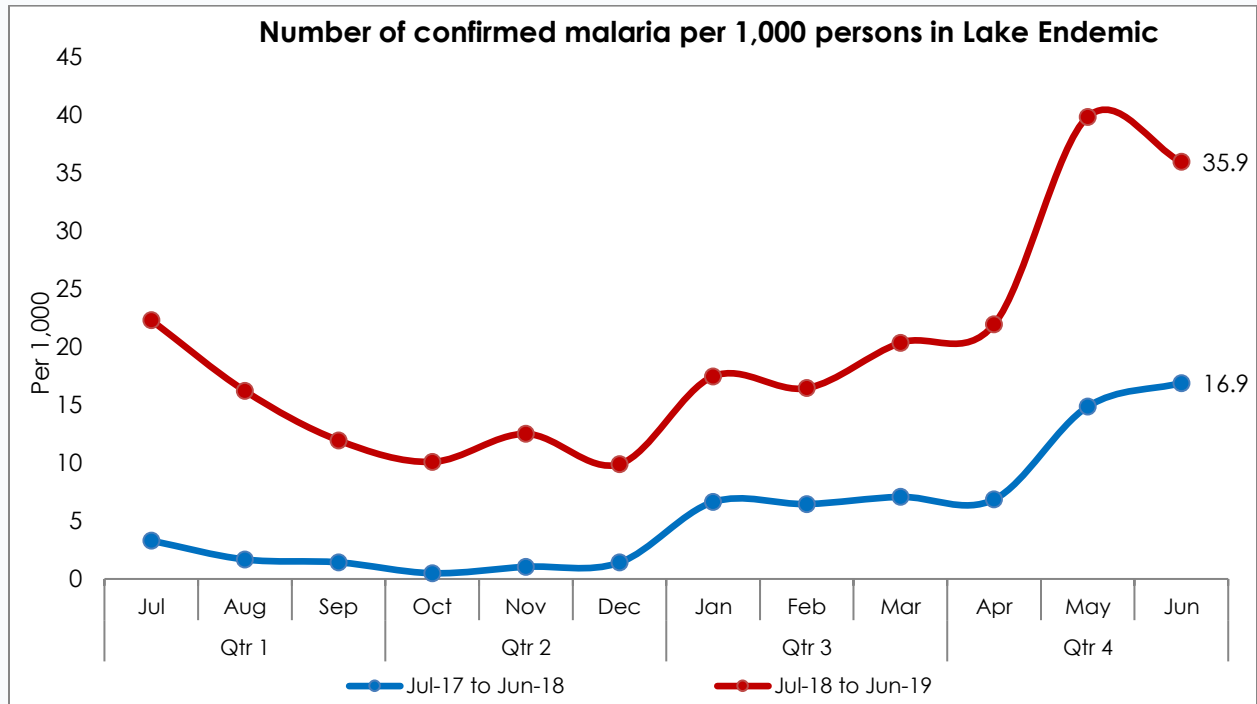
#### Figure 1b: Number of Outpatient Confirmed Malaria Cases per 1,000 of Population by malaria epidemiology zones

##### 1b. Confirmed Malaria Cases per 1,000 population by Epidemiological zones

Figure 1b shows the percentage of outpatient suspected malaria cases that are confirmed to have malaria parasite by microscopy or RDT per 1000 people by the malaria epidemiological zones.

##### Lake Endemic:

The Lake endemic zone depicted a gradual ascend with the malaria monthly incidence increasing from the previous quarter to a high 20.4 in March 2019.

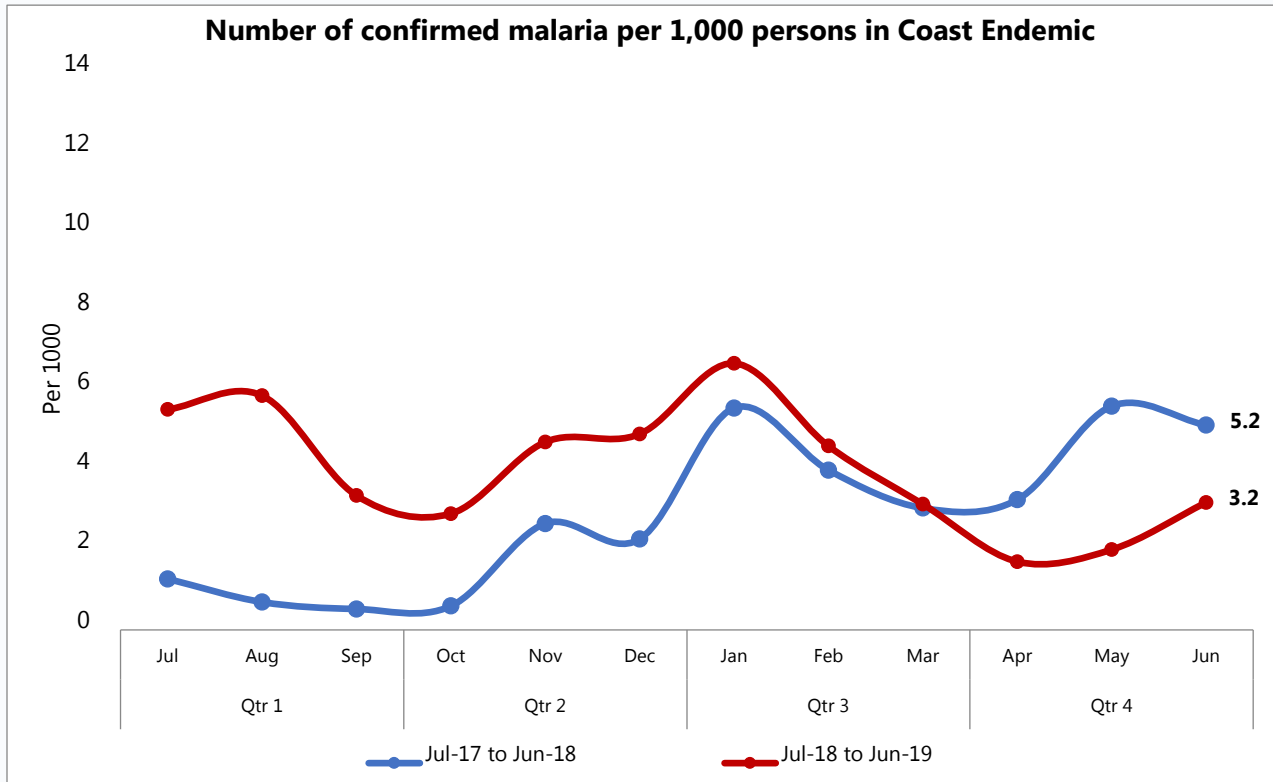


Source: DHIS



**Coast Endemic:**

The confirmed malaria cases per 1,000 persons in this region increased from 1.7 to 3.2 during the reporting period.

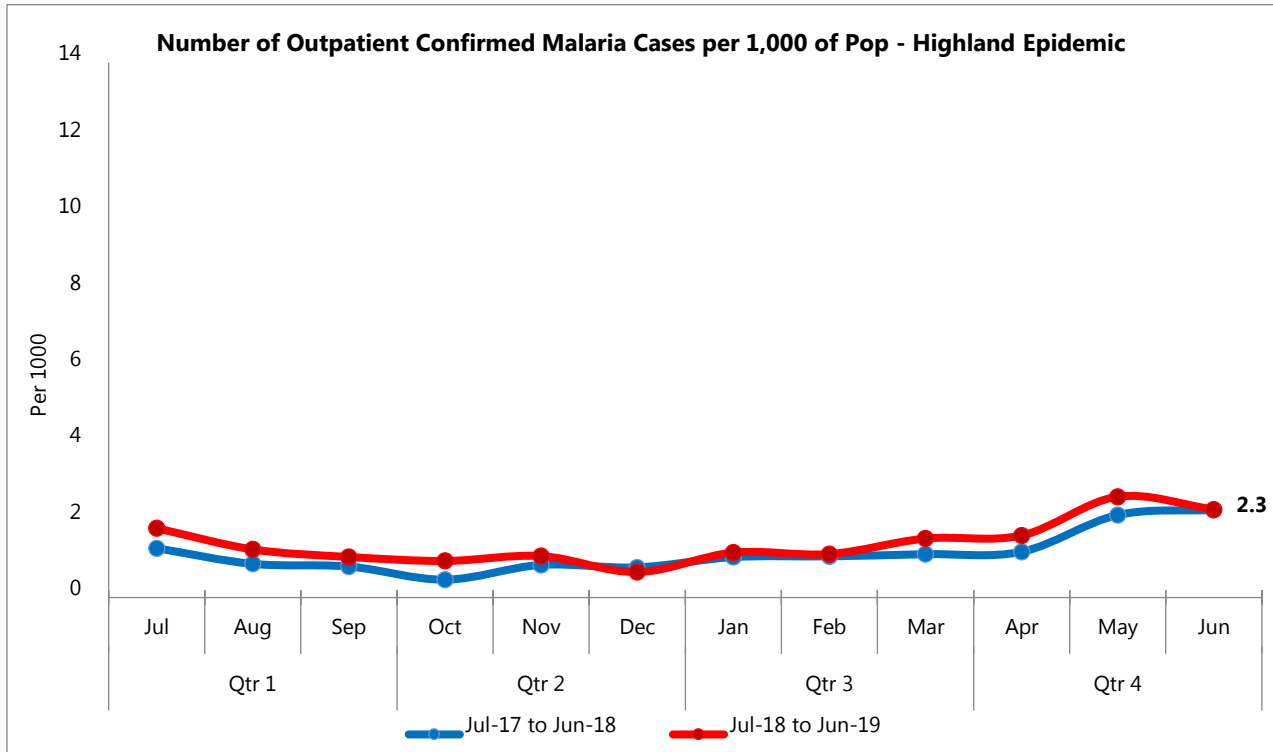


Source: DHIS



### Highland Epidemic

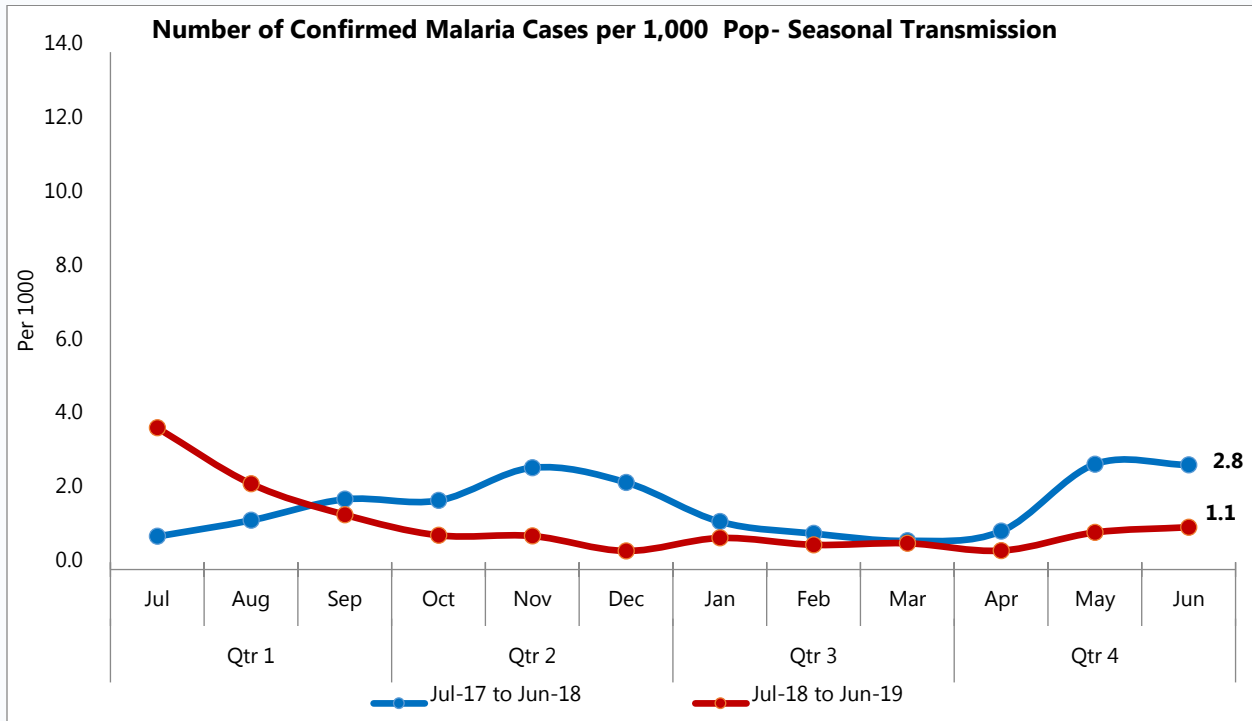
The confirmed malaria cases per 1,000 persons in the highland epidemic prone zone increased from 1.6 in April 2019 to 2.3 in June 2019.



Source: DHIS

### Seasonal Transmission Zone

In the Seasonal Transmission zone, the confirmed malaria cases per 1,000 persons increased from 0.5 in April 2019 to 1.1 in June 2019.

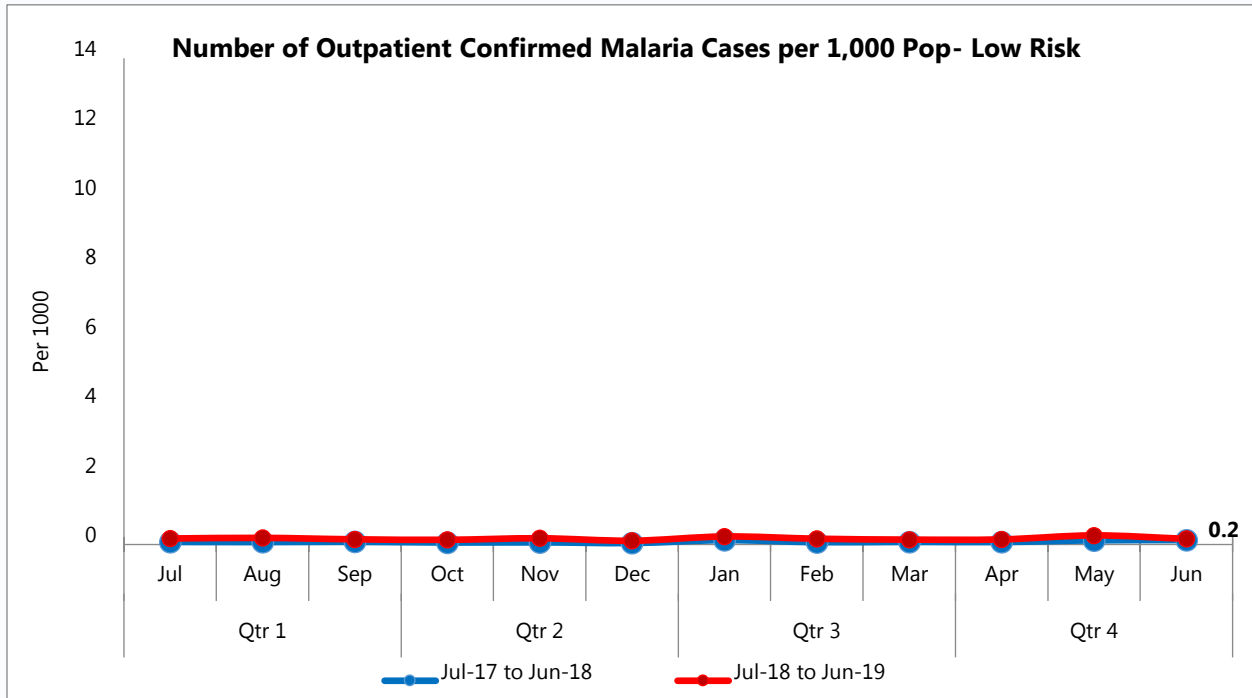


Source: DHIS



**Low Transmission zone**

In this zone, the confirmed malaria cases per 1000 population increased from 0.1 in April 2019 to 0.2 in June 2019.



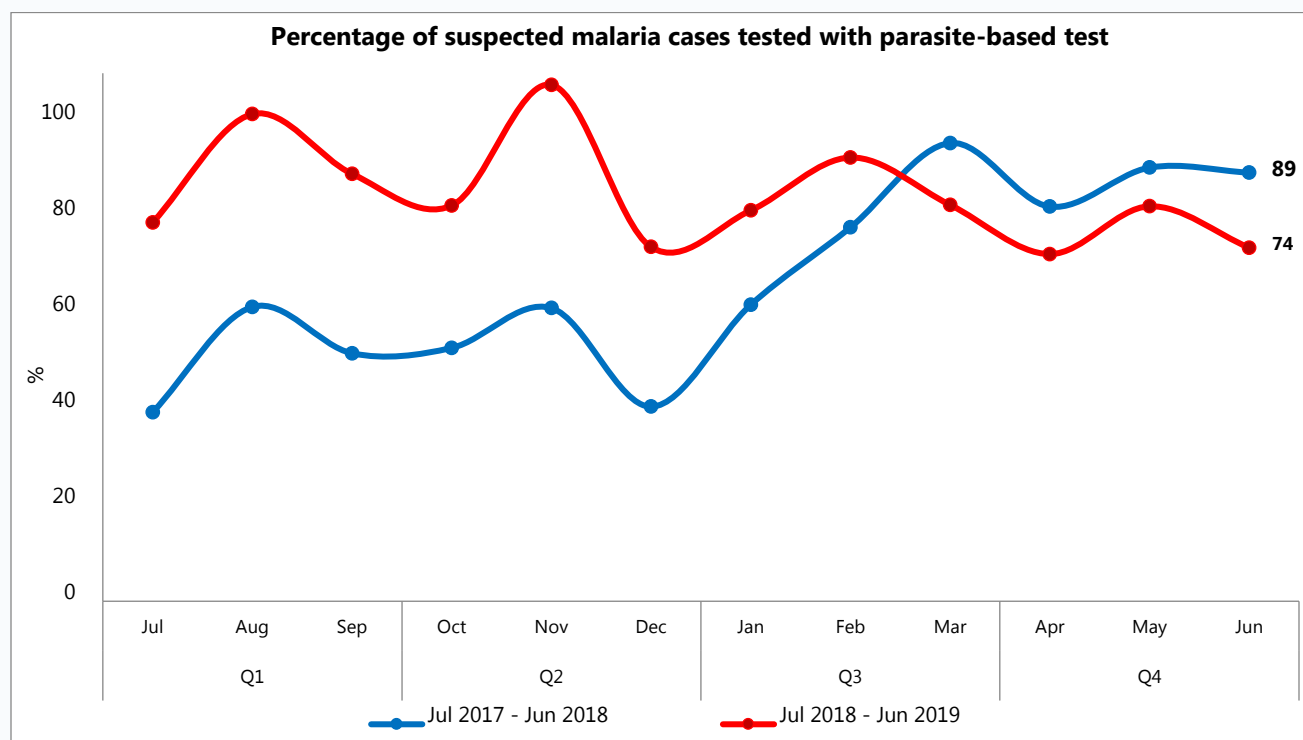
Source: DHIS



## 2. Suspected malaria cases tested with parasite-based test

The suspected malaria cases tested with a parasite-based test decreased from 82% in May 2019 to 74% in June 2019. The drop testing of suspected malaria cases can be attributed to the court ruling barring non-laboratory staff from undertaking any diagnostic services. There is need to ensure that this issue is resolved to ensure proper management of malaria as per the guidelines across the country.

**Figure 2: Suspected malaria cases tested with parasite-based test in Kenya**



Source: DHIS

## 3. Outpatient Test Positivity Rates among the under 5 years and all ages

Figure 3 presents the overall outpatient test positivity rates for the under-fives and all ages in Kenya. This graph shows the trends with regard to the percentage of the malaria cases that tested positive against the total number of cases tested for parasites.

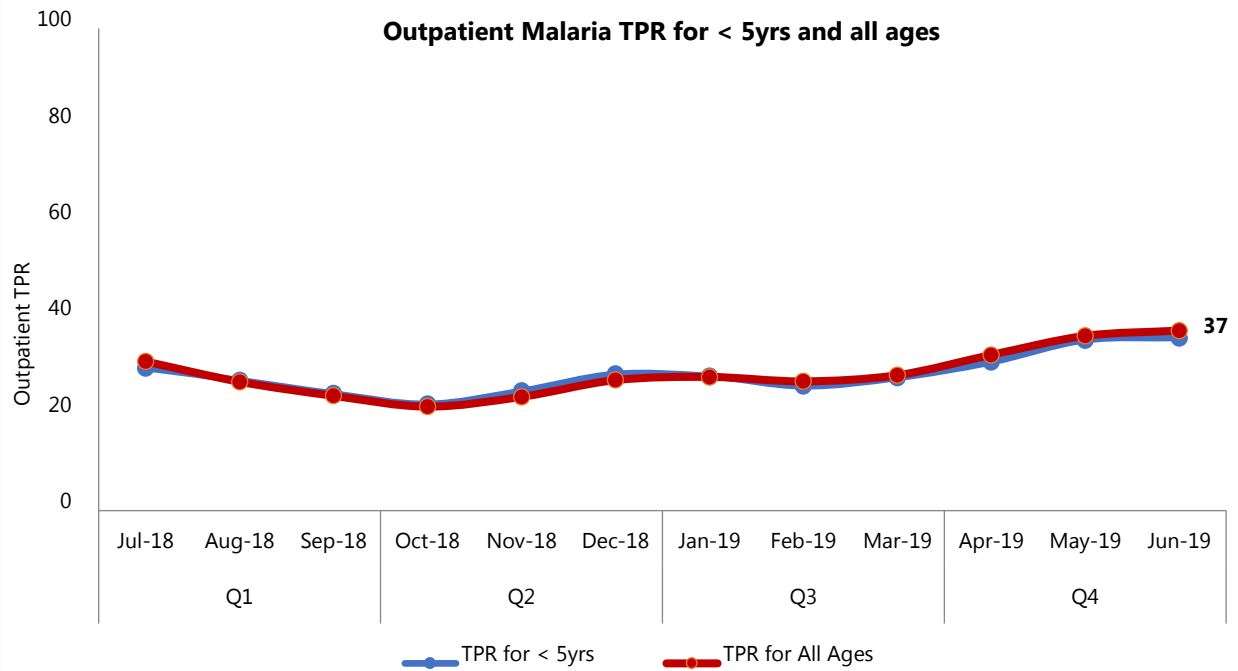
The malaria test positivity rates among all ages increased from 32% to 37% during the reporting period. The positivity rates among the children under 5 years of age witnessed a similar trend. This increase can be attributed to the progression to the malaria peak transmission season in the country which usually occur in the period May -June -July of





every year. Counties in the seasonal and epidemic prone malaria zones are required to intensify malaria surveillance in their sub-counties' sentinel facilities weekly thresholds in order to detect and respond to probable upsurges and avert epidemics.

**Figure 3: Outpatient TPR for < 5yrs and all ages in Kenya**



Source: DHIS



### Coverage for outpatients treated with artemisinin-based combination therapy

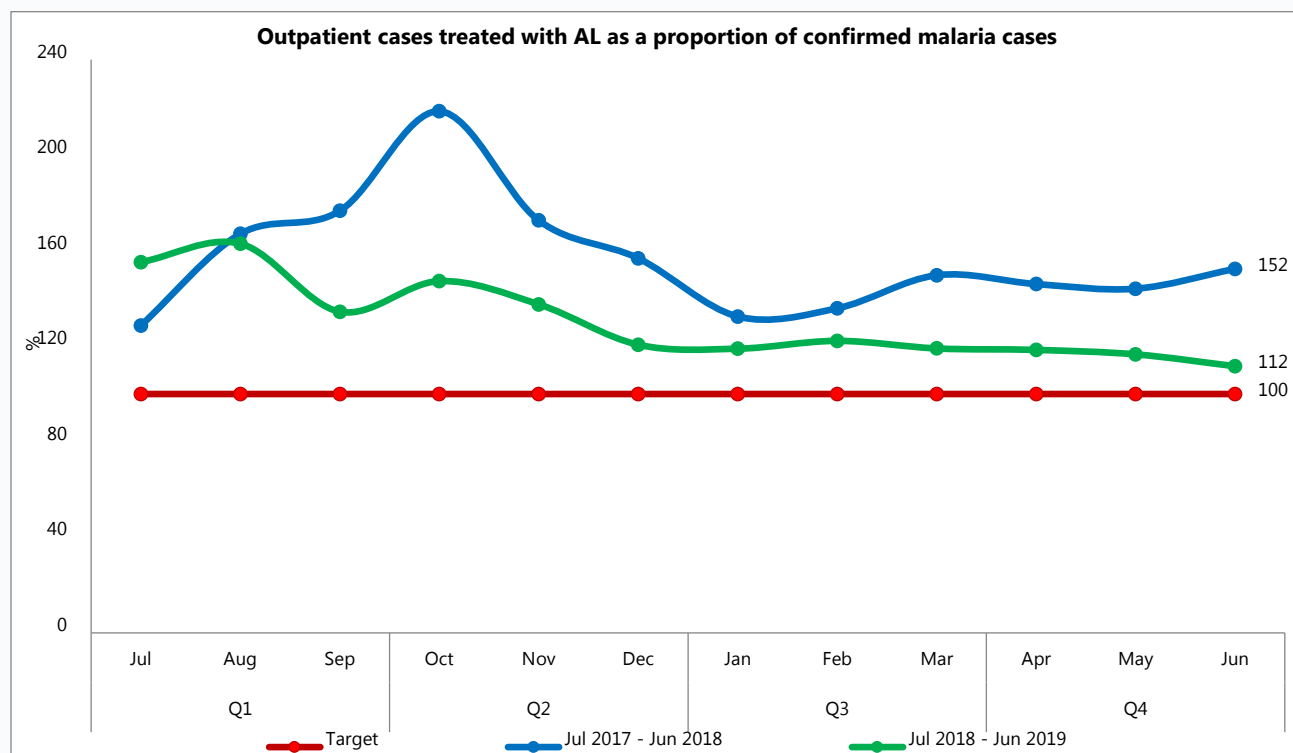
Kenya has adopted the policy of testing suspected cases of malaria before treatment. The first line anti-malarial for uncomplicated malaria-AL, should only be administered to patients who are tested for malaria parasites using a parasite laboratory test, and the results are positive.

Figure 4: shows the percentage of outpatient cases that were treated using artemisinin-based combination therapy over the number of confirmed malaria cases (positive parasitological results) expected to be treated with appropriate anti-malarial medicines during the reporting period.

In a well-stocked pipeline, it is expected that all the uncomplicated confirmed malaria cases will be managed with the recommended first line treatment currently ACTs. In the absence of stocks of either diagnostics or antimalarials, the ratio can be skewed. It is prudent to ensure that all the treatment sites are fully equipped with all commodities and health workers are adhering to the guidelines.

The number of patients treated with ACTs when compared to the reported confirmed malaria cases decreased from 118% to 112% during the reporting period. This is an improvement towards the targeted 100%.

**Figure 4: Proportion of Outpatient confirmed malaria cases treated with AL**



Source: DHIS



### Percentage of ANC clients given IPTp and proportion of ANC clients issued with LLINs

The prevention of malaria in pregnancy involves combination strategies that together are aimed at reducing maternal and perinatal morbidity and mortality occasioned by malaria. The strategies comprise the antenatal care (ANC) package that comprises at least two doses of intermittent preventive treatment for expectant mothers (IPT2) and provision of Long-Lasting Insecticide Nets (LLINs) in Endemic areas.

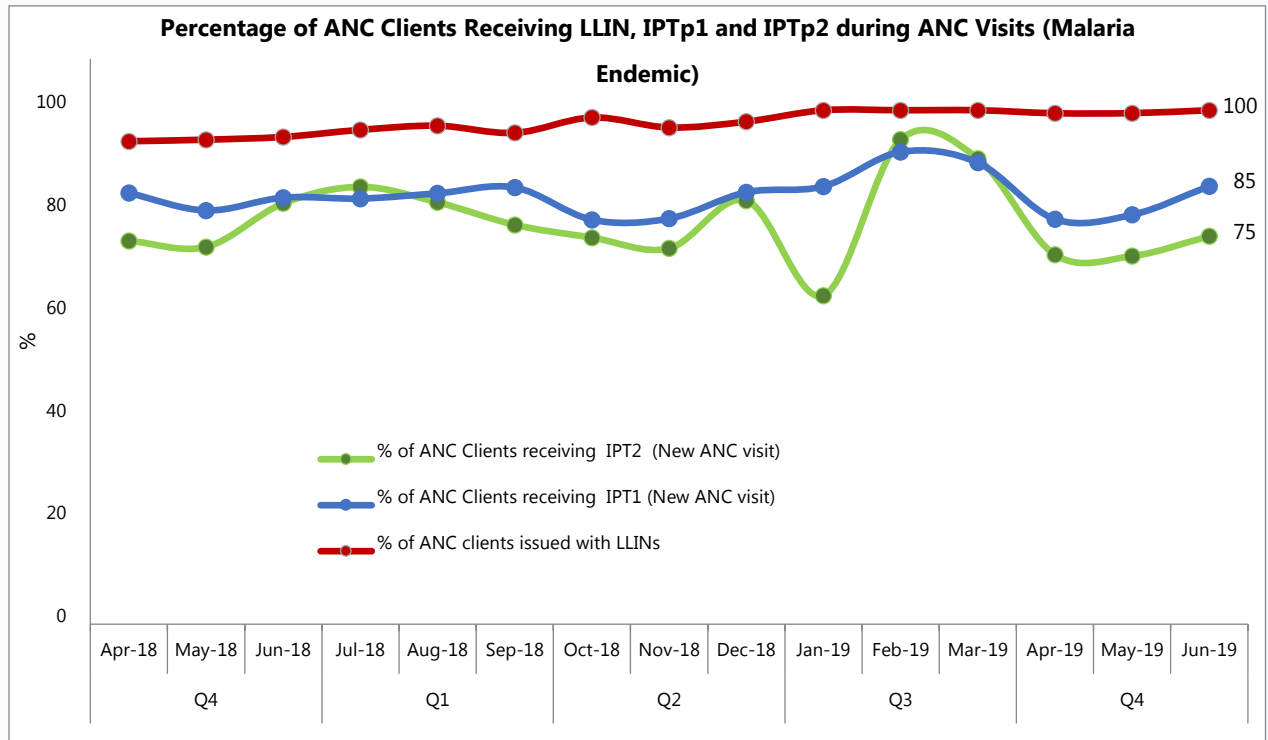
The proportion of ANC clients issued with the first dose of intermittent presumptive treatment (sulphadoxine pyrimethamine) increased from 79% in April to 85% in June 2019. The second dose of IPTp issued in the subsequent monthly visit increased from 72% to 75%.

The number of LLINs issued to pregnant women at ANC remained high at 100% during the reporting period.





**Figure 5: Percentage of Antenatal Care Clients Receiving Insecticide Treated Nets and Intermittent Preventive Treatment (IPTp1 and IPTp2) in Endemic areas**



Source: DHIS



### Reporting rates by data sources

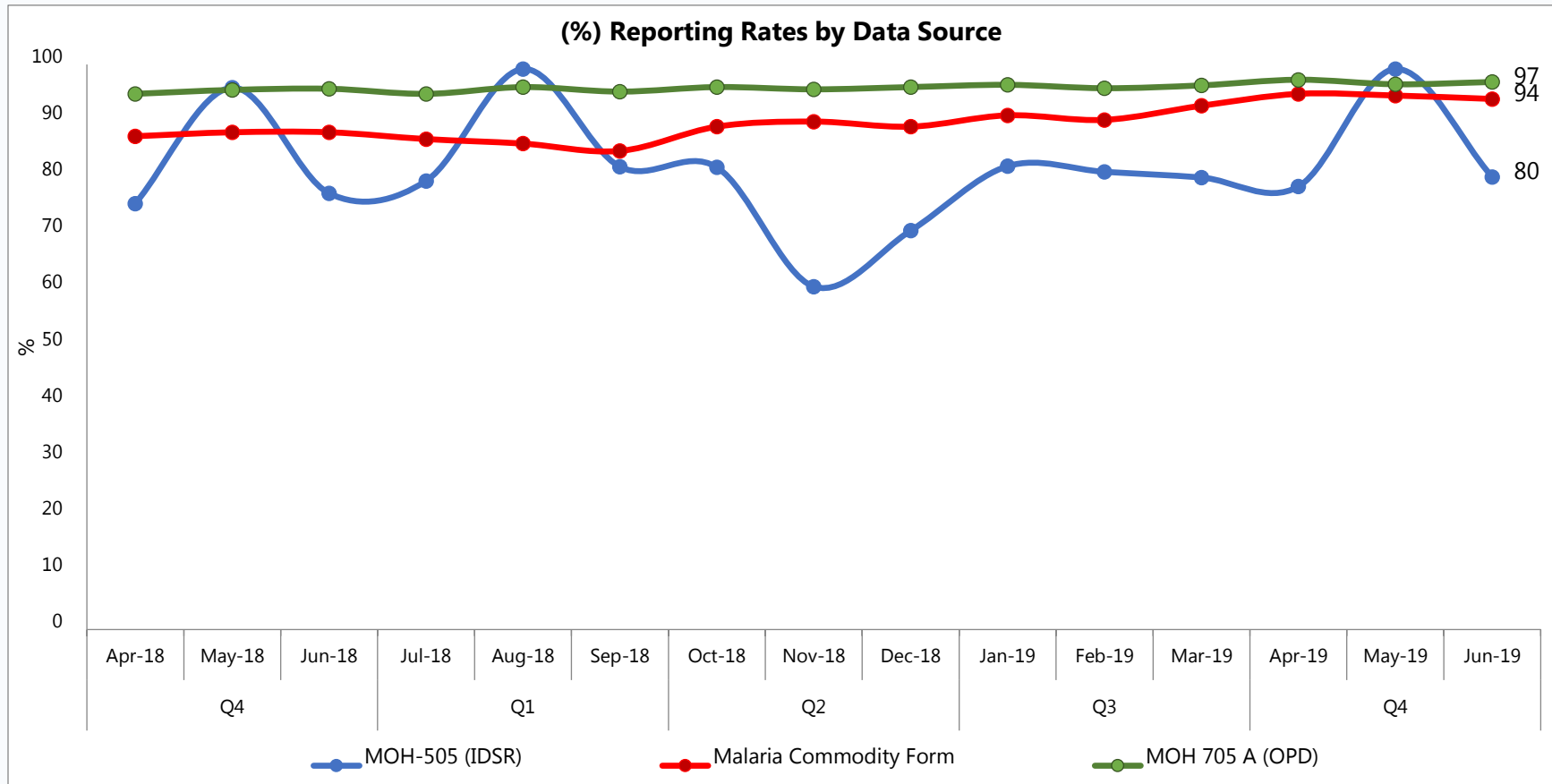
The National Malaria Control Program (NMCP) derives surveillance monitoring and evaluation (SM&E) data from various routine data reporting systems that includes the District Health Information Software (DHIS), electronic-Integrated Disease Surveillance and Response (IDSR), and the Logistics Management Information System (LMIS). The reporting rates presented in graph 6 are for DHIS, IDSR and LMIS and is derived from the number of health facilities that send in monthly reports against the number of health facilities expected to report each month. The e- IDSR data is an average of the weekly data that was reported during the reporting months.

The IDSR reporting rate increased from 78% in April 2019 to 99% in May 2019 before dropping to 80% in June 2019. Health facilities and sub-counties are encouraged to report on time since inconsistent weekly reporting as has been witnessed will cripple disease surveillance.

The Malaria Commodity form (MOH 743) reporting was consistently high at an average of 95% during the reporting period. Almost all the outpatient services reports from all facilities were received and data uploaded in DHIS at 97%.



Figure 6: Reporting rates by Data Sources (DHIS)



Source: DHIS



## Tables

This section provides a general overview in terms of how the counties performed in data collection and reporting for selected malaria indicators.

**Table 1a: Malaria Treatment by County**

The difference in the number of outpatients confirmed malaria cases and the aggregated patients on AL could be due to irrational treatment of negative cases and the bundling of lower weight bands to treat older patients (e.g. combining four blister packs of the 6's to treat a patient heavier than 35Kg).

The table 1a. below shows the treatment performance

April to June 2019		O.P.D			Proportion of malaria in OPD		Treatment				Total Patient on AL	Artesunate Injection Quantity dispensed.	Patients on AL vs. confirmed malaria		
Rank	County	OPD cases <5 yrs	OPD cases > 5 yrs	OPD cases	Confirmed Malaria (only Positive cases) <5 yrs	Confirmed Malaria (only Positive cases) >5 yrs	Patient on AL weight 5 -14 kgs	Patient on AL weight 15 - 24kgs	Patient on AL weight 25 - 34kgs	Patient on AL weight 35+ kgs					
1	Busia	70,546	207,201	277,747	57,409	129,663	81.4%	67.4%	45,186	37,858	24,942	66,957	174,943	22,321	94%
2	Siaya	77,875	224,141	302,016	52,150	140,001	67.0%	63.6%	42,474	42,125	29,677	83,732	198,008	29,487	103%
3	Kakamega	157,881	562,957	720,838	83,360	267,317	52.8%	48.6%	66,161	73,528	50,995	157,550	348,234	63,263	99%
4	Bungoma	125,065	316,501	441,566	56,426	119,088	45.1%	39.7%	43,984	33,634	17,008	60,704	155,330	64,885	89%
5	Vihiga	37,865	165,144	203,009	14,227	72,641	37.6%	42.8%	12,034	17,839	16,083	45,318	91,274	12,478	105%
6	Kisumu	94,828	307,767	402,595	31,429	97,044	33.1%	31.9%	23,651	26,514	18,207	55,856	124,228	32,121	97%
7	Migori	80,780	244,671	325,451	20,435	54,945	25.3%	23.2%	17,933	19,233	14,419	39,338	90,923	19,873	121%
8	Trans-Nzoia	52,699	141,458	194,157	7,418	19,972	14.1%	14.1%	4,882	6,554	4,543	11,378	27,357	8,306	100%
9	Turkana	92,540	150,023	242,563	8,559	15,360	9.2%	9.9%	7,791	6,347	5,880	12,976	32,994	8,537	138%
10	Kwale	81,223	253,310	334,533	5,883	20,065	7.2%	7.8%	8,326	9,212	6,791	18,271	42,600	5,014	164%
11	West Pokot	54,808	103,423	158,231	3,277	6,053	6.0%	5.9%	3,835	2,445	2,029	6,048	14,357	3,109	154%
12	Nandi	76,981	336,683	413,664	4,217	19,201	5.5%	5.7%	2,791	3,824	3,628	8,253	18,496	14,266	79%





April to June 2019					O.P.D				Treatment						
Rank	County	OPD cases		OPD cases	Confirmed Malaria (only Positive cases) <5 yrs	Confirmed Malaria (only Positive cases) >5 yrs	Proportion of malaria in OPD <5 yrs	Proportion of malaria in OPD	Patient on AL weight 5-14 kgs	Patient on AL weight 15-24kgs	Patient on AL weight 25-34kgs	Patient on AL weight 35+ kgs	Total Patient on AL	Artesunate Injection Quantity dispensed.	Patients on AL vs. confirmed malaria
		cases <5 yrs	OPD cases > 5 yrs												
13	Baringo	53,895	133,657	187,552	2,532	5,008	4.7%	4.0%	2,563	1,798	938	3,968	9,267	2,830	123%
14	Kilifi	128,211	351,736	479,947	5,550	15,696	4.3%	4.4%	2,374	2,985	2,552	5,894	13,805	2,006	65%
15	Kisii	83,444	298,334	381,778	3,249	12,254	3.9%	4.1%	3,016	3,333	3,268	8,126	17,743	4,785	114%
16	Mombasa	88,779	272,199	360,978	3,351	8,594	3.8%	3.3%	415	378	221	883	1,897	762	16%
17	Samburu	31,853	78,516	110,369	1,181	2,399	3.7%	3.2%	386	235	173	845	1,639	1,225	46%
18	Nyamira	42,587	162,238	204,825	1,047	3,567	2.5%	2.3%	323	479	333	1,373	2,508	1,299	54%
19	Uasin Gishu	96,067	533,672	629,739	2,263	9,492	2.4%	1.9%	1,879	2,950	1,266	5,188	11,283	3,446	96%
20	Kericho	72,329	314,140	386,469	1,592	6,270	2.2%	2.0%	1,404	1,679	1,358	4,379	8,820	3,696	112%
21	Narok	65,757	179,120	244,877	1,349	3,967	2.1%	2.2%	4,723	1,642	1,162	3,281	10,808	1,936	203%
22	Isiolo	23,090	68,032	91,122	464	1,662	2.0%	2.3%	369	529	357	1,026	2,281	271	107%
23	Tana River	21,707	46,449	68,156	382	799	1.8%	1.7%	223	83	305	579	1,190	272	101%
24	Nairobi	295,498	770,100	1,065,598	4,009	8,213	1.4%	1.1%	661	449	321	1,171	2,602	2,637	21%
25	Elgeyo-Marakwet	37,378	148,812	186,190	392	1,623	1.0%	1.1%	387	245	281	799	1,712	1,378	85%
26	Tharaka Nithi	54,020	251,617	305,637	350	1,107	0.6%	0.5%	203	117	158	458	936	97	64%
27	Homa Bay	1,443,150	171,738	1,614,888	8,447	20,418	0.6%	1.8%	8,682	8,570	4,915	17,588	39,755	9,087	138%
28	Nakuru	280,800	642,281	923,081	1,560	5,169	0.6%	0.7%	344	319	182	1,081	1,926	1,143	29%
29	Kajiado	91,169	228,480	319,649	476	1,274	0.5%	0.5%	174	141	107	430	852	318	49%
30	Garissa	47,462	102,079	149,541	217	493	0.5%	0.5%	327	316	536	1,323	2,502	858	352%
31	Meru	124,643	559,576	684,219	562	1,334	0.5%	0.3%	450	376	247	910	1,983	270	105%
32	Marsabit	31,562	90,814	122,376	124	286	0.4%	0.3%	48	19	36	107	210	124	51%
33	Taita Taveta	22,609	97,970	120,579	81	378	0.4%	0.4%	28	27	26	180	261	148	57%



April to June 2019		O.P.D					Treatment								
Rank	County	OPD cases			Confirmed Malaria (only Positive cases) <5 yrs	Confirmed Malaria (only Positive cases) >5 yrs	Proportion of malaria in OPD <5 yrs	Proportion of malaria in OPD	Patient on AL weight				Total Patient on AL	Artesunate Injection Quantity dispensed.	Patients on AL vs. confirmed malaria
		OPD cases <5 yrs	OPD cases > 5 yrs	OPD cases					5 -14 kgs	15 - 24kgs	25 - 34kgs	35+ kgs			
34	Kitui	88,894	385,623	474,517	305	587	0.3%	0.2%	111	85	75	233	504	267	57%
35	Kiambu	187,362	702,452	889,814	540	1,292	0.3%	0.2%	322	268	61	442	1,093	1,055	60%
36	Laikipia	46,743	188,118	234,861	77	229	0.2%	0.1%	32	24	5	109	170	80	56%
37	Machakos	103,212	429,243	532,455	155	616	0.2%	0.1%	32	37	24	128	221	30	29%
38	Mandera	79,533	113,796	193,329	107	265	0.1%	0.2%	27	19	17	37	100	124	27%
39	Lamu	20,669	47,588	68,257	27	73	0.1%	0.1%	5	3	6	26	40	92	40%
40	Bomet	72,970	328,430	401,400	74	501	0.1%	0.1%	87	91	79	374	631	197	110%
41	Makueni	68,661	344,767	413,428	59	165	0.1%	0.1%	26	51	24	93	194	252	87%
42	Embu	57,378	274,970	332,348	48	196	0.1%	0.1%	54	55	12	123	244	108	100%
43	Nyandarua	56,209	237,237	293,446	43	117	0.1%	0.1%	1	8	2	22	33	58	21%
44	Wajir	42,126	68,599	110,725	21	47	0.0%	0.1%	13	17	15	33	78	114	115%
45	Muranga	88,295	305,543	393,838	21	76	0.0%	0.0%					0	4	0%
46	Kirinyaga	51,896	214,658	266,554	8	34	0.0%	0.0%	13	10	20	23	66	20	157%
47	Nyeri	73,231	418,879	492,110	10	101	0.0%	0.0%	10	10	1	58	79	117	71%
Kenya		790,079	2,319,863	3,109,942	331,413	916,031	41.9%	40.1%	264,096	263,632	181,754	533,809	1,243,291	261,271	100%

Source: DHIS



**Table 1b: Reporting Rates by County**

Table 1b: Reporting Rates by County

Table 1b indicates the counties monthly reporting rates and timeliness for malaria datasets.

Malaria datasets reporting completeness Apr to Jun 2019						
County	MOH 505 IDSR		MOH 705 A OPD <5 years		Malaria Commodities Form	
	Reporting rate	Reporting rate on time	Reporting rate	Reporting rate on time	Reporting rate	Reporting rate on time
Baringo	46	41	96	96	89	79
Bomet	93	73	99	98	85	82
Bungoma	58	47	100	100	100	99
Busia	99	77	99	98	100	98
Elgeyo-Marakwet	93	92	97	97	92	89
Embu	48	33	100	98	96	95
Garissa	91	78	98	95	94	92
Homa Bay	72	71	99	99	100	92
Isiolo	56	48	91	77	91	44
Kajiado	83	78	98	86	98	86
Kakamega	100	100	96	95	98	97
Kericho	90	76	98	92	94	84
Kiambu	78	74	100	99	97	75
Kilifi	69	49	98	97	94	92
Kirinyaga	80	80	96	79	65	62
Kisii	98	97	99	98	99	98
Kisumu	100	99	100	99	100	99
Kitui	94	86	100	99	94	91
Kwale	71	50	100	95	101	87
Laikipia	83	72	96	88	97	84
Lamu	42	42	94	84	84	63
Machakos	70	66	95	89	91	78
Makueni	97	94	100	100	99	98
Mandera	78	74	93	87	86	82
Marsabit	51	34	93	92	88	85
Meru	100	100	98	95	90	84
Migori	100	100	100	100	99	97
Mombasa	52	31	98	98	99	98
Muranga	79	68	93	87	93	76
Nairobi	56	43	89	87	92	80
Nakuru	99	96	98	96	100	98
Nandi	93	91	100	100	94	94
Narok	65	60	98	98	90	81
Nyamira	85	85	100	100	100	96
Nyandarua	43	28	99	97	99	95
Nyeri	82	76	97	90	98	82



Malaria datasets reporting completeness Apr to Jun 2019						
County	MOH 505 IDSR		MOH 705 A OPD <5 years		Malaria Commodities Form	
	Reporting rate	Reporting rate on time	Reporting rate	Reporting rate on time	Reporting rate	Reporting rate on time
Samburu	80	47	98	95	96	93
Siaya	75	62	99	98	100	96
Taita Taveta	77	74	96	92	88	74
Tana River	75	74	95	94	100	90
Tharaka Nithi	73	68	97	97	92	85
Trans-Nzoia	65	43	98	97	93	86
Turkana	84	77	99	91	99	92
Uasin Gishu	91	89	98	95	91	84
Vihiga	92	90	98	97	97	94
Wajir	86	78	90	86	84	72
West Pokot	66	65	87	85	75	72
<b>Kenya</b>	<b>80</b>	<b>72</b>	<b>97</b>	<b>95</b>	<b>95</b>	<b>88</b>

### Malaria Treatment in the Community

The malaria high burden region undertakes management of uncomplicated malaria within the community through community health volunteers (CHVs). Eight counties in the lake endemic region have been implementing this. Data is uploaded in the DHIS by the CHEW on a monthly basis in each CHU aggregates into the summary displayed in Table: 1c

**Table 1c: Treatment of malaria in the Community**

Month	CHEW artemether-lumefantrine 6s	CHEW artemether-lumefantrine 12s	CHEW artemether-lumefantrine 18s	CHEW artemether-lumefantrine 24s	CHEW malaria RDTs
Jan-19	9,570	19,014	3,013	10,591	65,644
Feb-19	11,095	19,589	2,799	11,035	56,550
Mar-19	11,687	12,985	10,231	13,264	59,462
<b>Quarter 3</b>	<b>32,352</b>	<b>51,589</b>	<b>16,043</b>	<b>34,890</b>	<b>181,656</b>
Apr-19	11,702	34,049	6,104	15,341	76,783
May-19	14,662	30,548	8,195	14,071	68,536
Jun-19	12,080	24,745	7,816	13,246	71,407
<b>Quarter 4</b>	<b>38,444</b>	<b>89,342</b>	<b>22,115</b>	<b>42,658</b>	<b>216,726</b>

Source: DHIS



**Table 2: Average Malaria monthly Incidence**

**Table 2a: Fiscal Year Annual malaria incidence and monthly average**

<b>Fiscal Year (Jul-Jun)</b>	<b>Annual Malaria Incidence</b>	<b>Average monthly incidence per year</b>
2016/2017	57.9	4.8
2017/2018	24.7	2.1
2018/2019	54.7	4.6

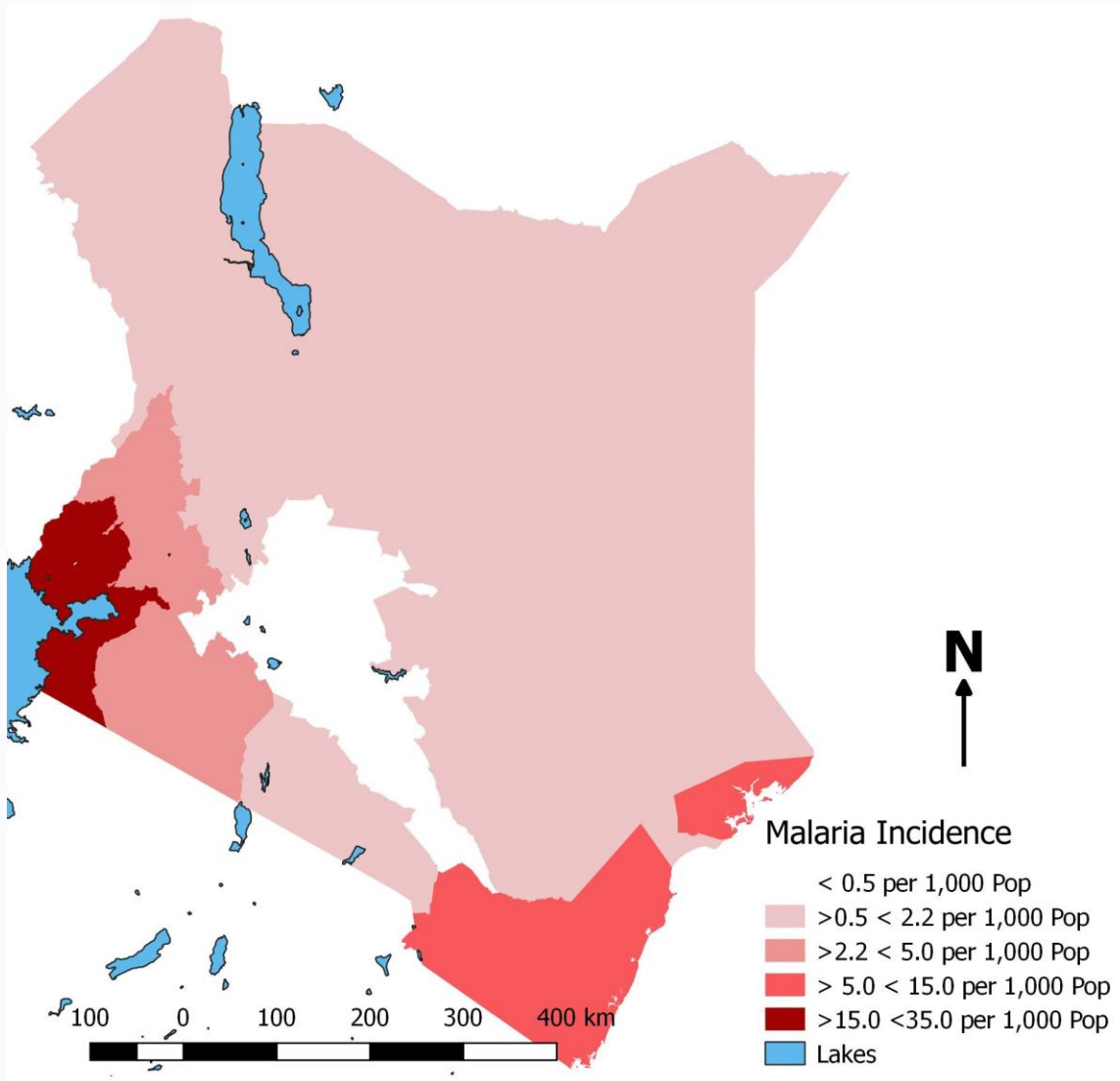
**Table 2b: Fiscal year monthly average monthly incidence per quarter**

<b>Malaria average monthly Incidence 2016 to 2019</b>				
<b>Year \ Qtr.</b>	<b>Jan - Mar</b>	<b>Apr - Jun</b>	<b>Jul – Sep</b>	<b>Oct – Dec</b>
<b>2016</b>	6.2	5.2	5.3	3.6
<b>2017</b>	4.9	5.5	1.0	1.4
<b>2018</b>	3.1	3.7	4.3	2.7
<b>2019</b>	4.2	6.8		



**Map**

**Map (a): Confirmed malaria per 1000 population, Apr to Jun 2019**



Source: DHIS