



Malaria Surveillance Bulletin

NATIONAL MALARIA CONTROL PROGRAM - QUARTER 1: ISSUE 18 – SEPTEMBER 2016

The **MALARIA SURVEILLANCE BULLETIN**

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MESSAGE FROM THE PROGRAM MANAGER

Welcome to the 18th issue of the Kenya Malaria Control Program's Quarterly Surveillance bulletin. This issue focuses on the first quarter of the financial year 2016/2017 i.e. July to September 2016, with key malaria indicators demonstrated using six (6) surveillance core graphs. Due to differences in malaria transmission in the country, the graphs for outpatient confirmed malaria cases and test positivity rates (TPR) are disaggregated into the four malaria epidemiological zones. Tables showing County data for selected malaria indicators; percentage treated, number of malaria cases and epidemiological zones are also included.

In this quarter, we carried out the filed work of the second inpatient Quality of Care Survey which focused on patient management of severe malaria. Preparatory work was also done for the medicine availability survey in the private sector that will be carried out in the next quarter.

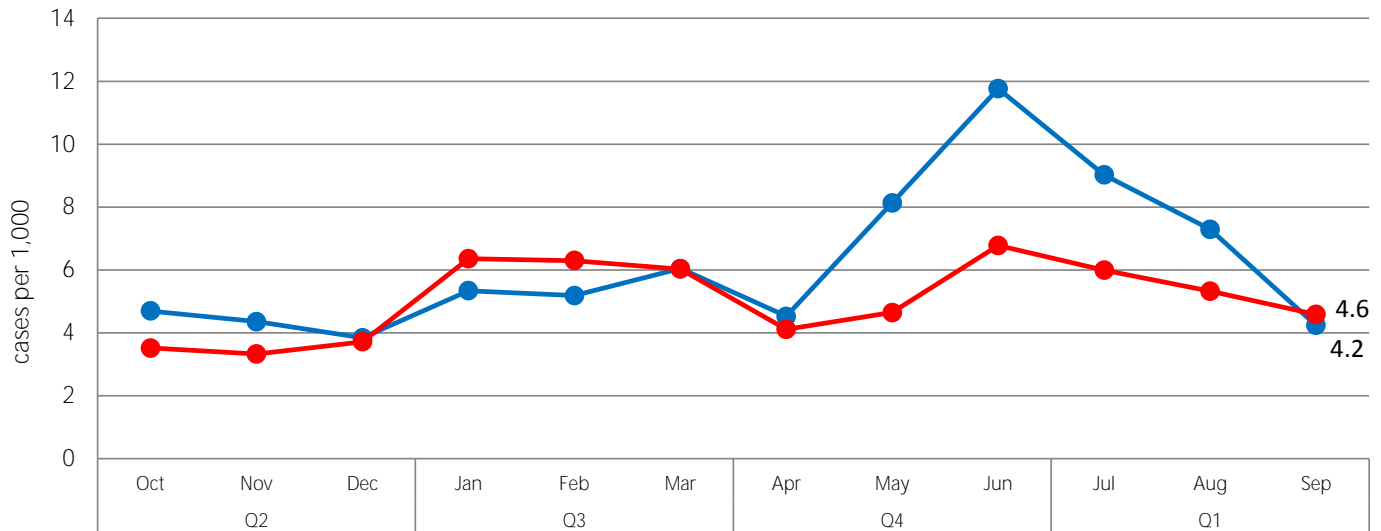
In preparation for regional dissemination of the 2015 Kenya Malaria Indicator Survey and other programme documents programme officers attended a data demand and use workshop. The knowledge gained will be shared with the Counties so that they can plan their interventions based on data from various sources.

The programme also prepared itself for the last wave of Mass net distribution on irrigation areas of Marigat and Mwea, and hot spots of Sololo in Marsabit and Loima in Turkana. The distributions would take place next quarter. We do hope that you will use these bulletins to help you see the situation in your transmission area and Counties and thus help you make decisions concerning malaria interventions. We note that the reporting rates have increased and we encourage you to maintain high reporting rates (above 80%) so that your data is representative of your County. We encourage you to do similar analysis with your surveillance and DHIS data at both the County and Sub-county levels. We would like to encourage you to also improve the quality of the data that is put into the DHIS.

Figure 1a shows the number of outpatient suspected malaria cases that are confirmed to have malaria parasite by microscopy or RDT per 1000 people resident in Kenya.

The number of confirmed malaria cases reported decreased from 6.0 in July to 4.6 in September 2016. The peak transmission season of June/July reported much lower figures (6.8) compared to last year's (11.6). This is a clear indication of malaria disease reduction despite increased diagnostic capacity.

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



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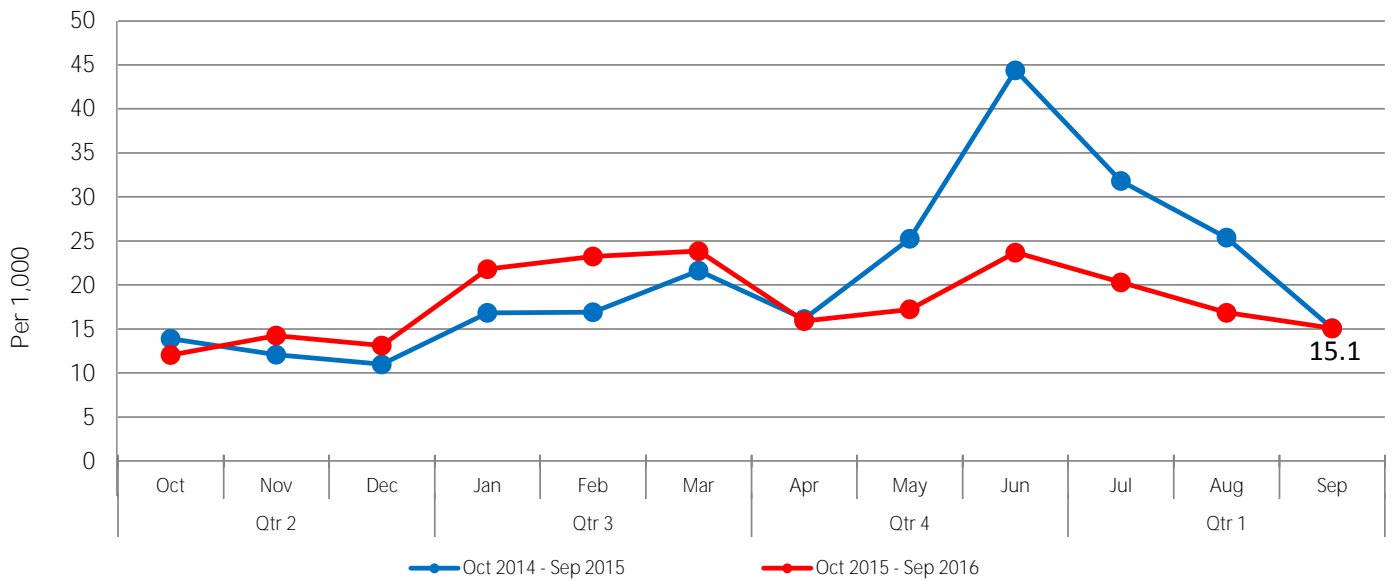
Source(s): DSRU, KNBS Projection 2009 Census

Figure 1b: Number of Outpatient Confirmed Malaria Cases per 1,000 of Population by malaria epidemiology 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. Ideally, a rate of less than 1 case per 1000 people sustained over a 12-month period indicates readiness for the elimination phase.

Lake Endemic:

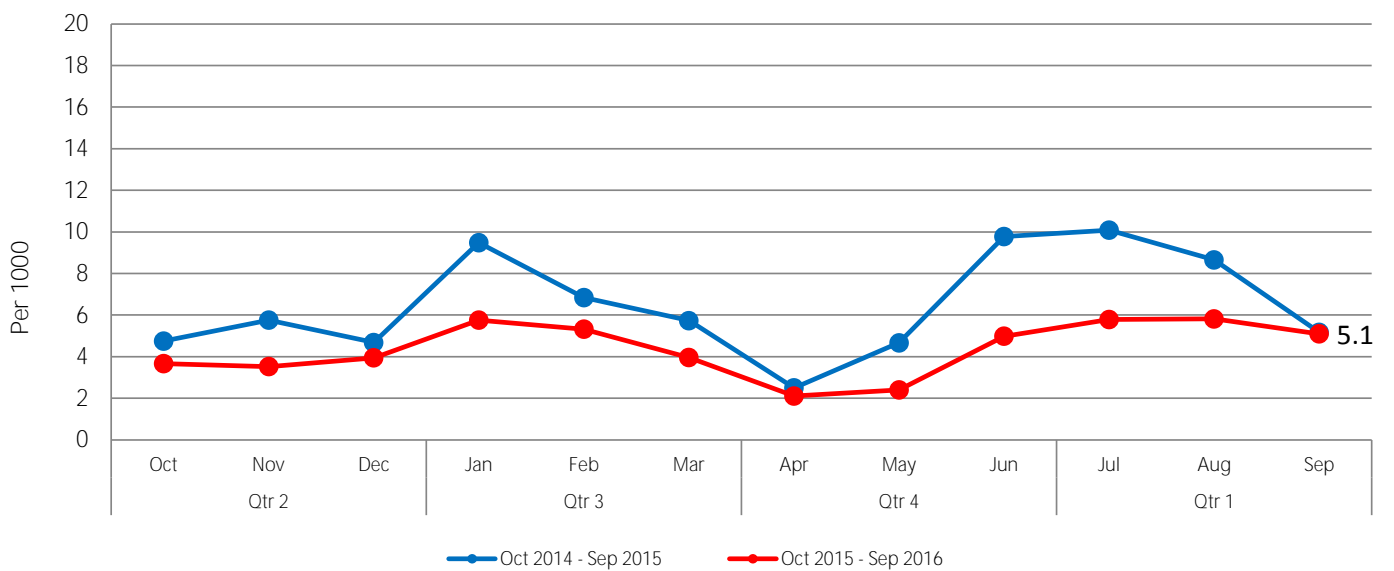
In the Lake Endemic region, the confirmed malaria cases in the population decreased from 20.3 in July to 15.1 in September 2016. This graph mirrors the graph of the National incidence data. This implies that this region bears the bulk of the malaria burden. Significant efforts have been made to scale down transmission of malaria in this region.



Source: DSRU, KNBS Projection 2009 Census

Coast endemic

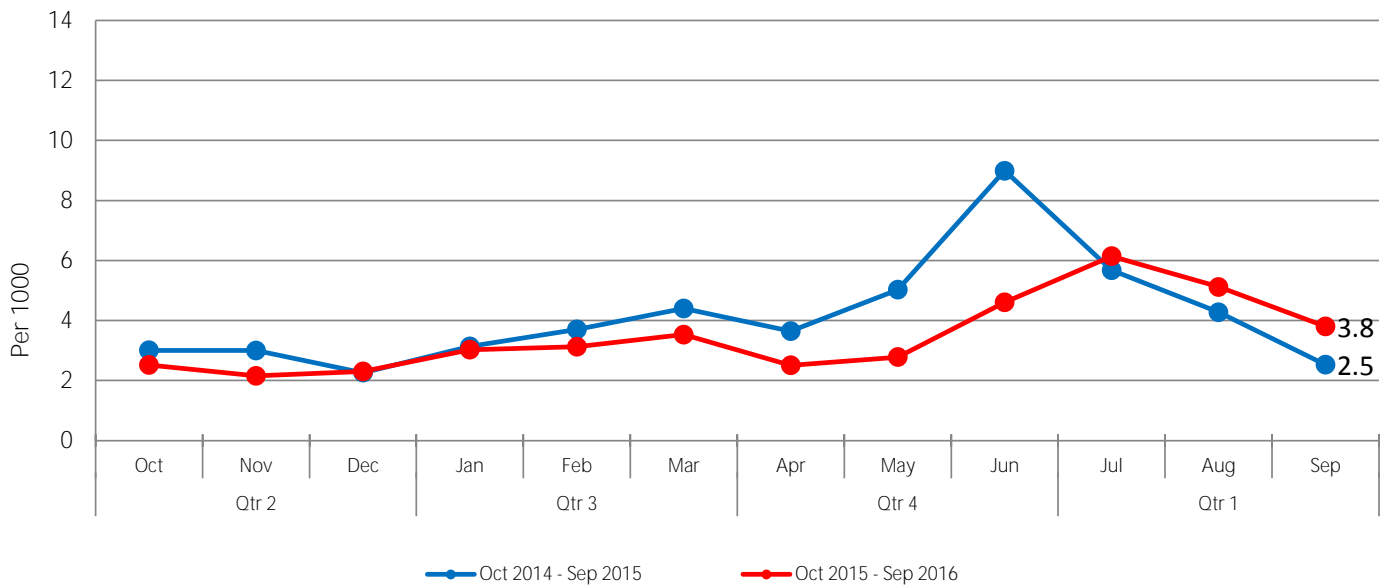
In the coast endemic zone, this rate decreased from 5.8 in July 2016 to 5.1 in September 2016.



Source: DSRU, KNBS Projection 2009 Census

Highland Epidemic

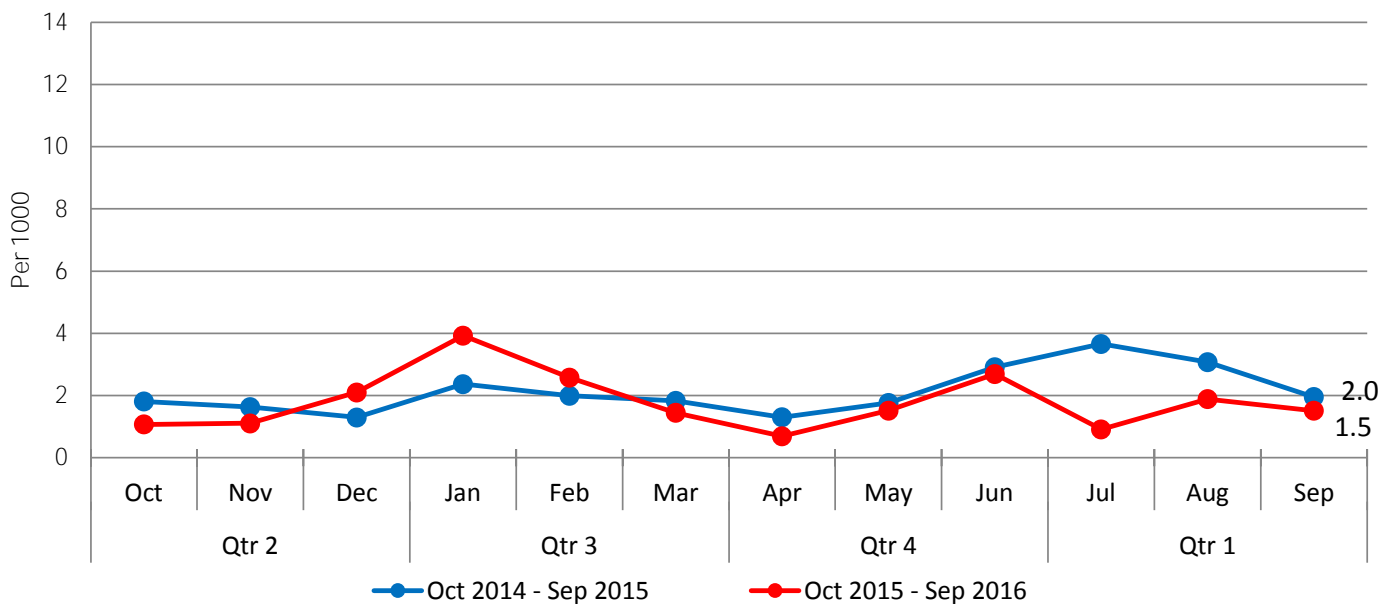
In the Highland Epidemic Prone areas, the confirmed malaria cases per thousand (1,000) persons decreased from 6.1 to 3.8 during the reporting period.



Source: DSRU, KNBS Projection 2009 Census

Seasonal Transmission Zone

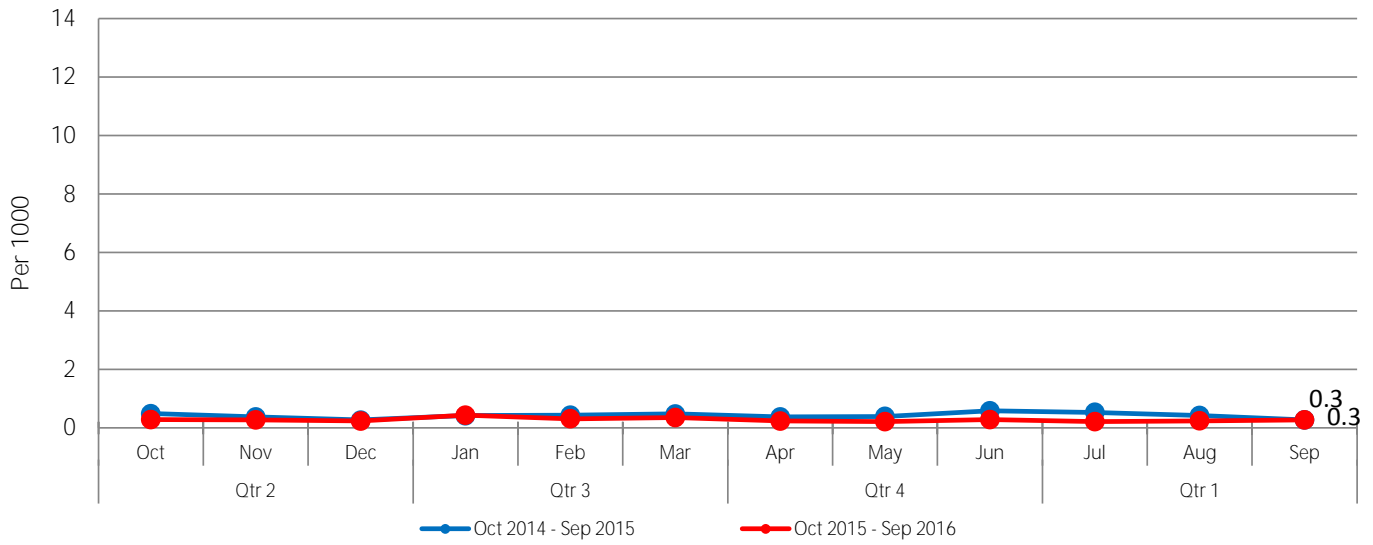
In the Seasonal transmission areas of Kenya, confirmed malaria cases per 1,000 persons increased from 0.9 in July 2016 to 1.5 in September 2016. This depicts tremendous progress in malaria control efforts.



Source: DSRU, KNBS Projection 2009 Census

Low Transmission zone

In the Low malaria risk areas, the confirmed malaria cases per 1,000 persons of population increased from 0.2 in July 2016 to 0.3 in September 2016. In this region, a rate of less than 1 case per 1,000 persons has been maintained for more than 24 months, an indication that this region is clearly ready for malaria elimination.



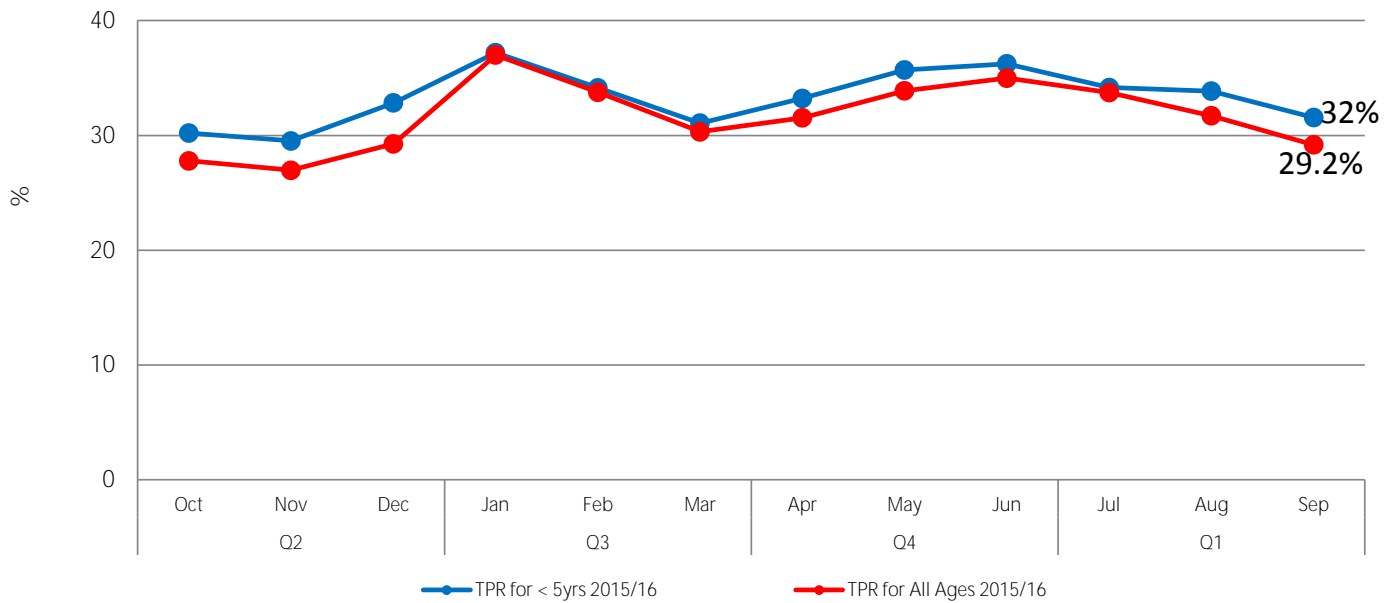
Source: DSRU, KNBS Projection 2009 Census

OUTPATIENT TEST POSITIVITY RATES AMONG THE UNDER 5 YEARS AND ALL AGES

Figure 2a presents the overall outpatient test positivity rates for the under-fives and all ages in Kenya. In Figure 2b the outpatient test positivity rates for the under-fives and all ages by the malaria epidemiological zones are depicted. The graphs are based on data from the weekly reports by the Diseases Surveillance and Response Unit (DSRU). These graphs show the trends with regard to the percentage of the malaria cases that tested positive against the total number of cases tested for parasites.

The Test Positivity Rate for all ages decreased from 33% in July 2016 to 29% in September 2016 and among the under 5 year old the TPR decreased from 34% to 32% in the same period.

Figure 2a: Outpatient TPR for < 5yrs and all ages



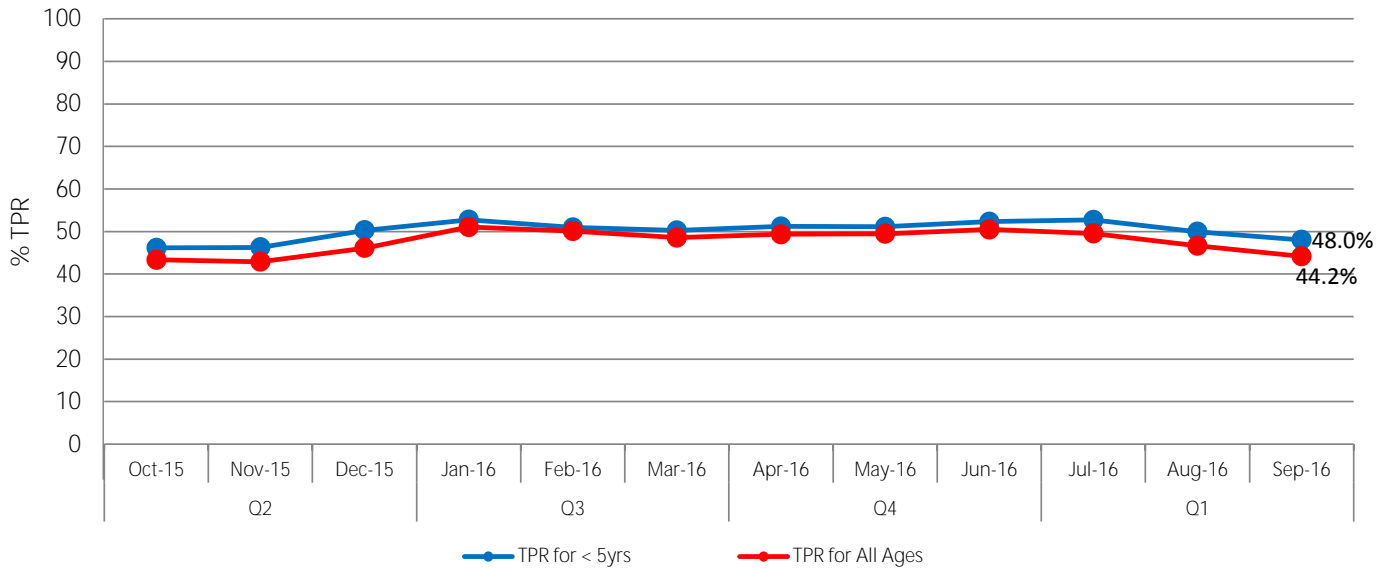
Source(s): DSRU

Figure 2b show outpatient TPR disaggregated by different epidemiological zones.

Figure 2b: Outpatient TPR for < 5yrs and all ages by malaria epidemiology zones

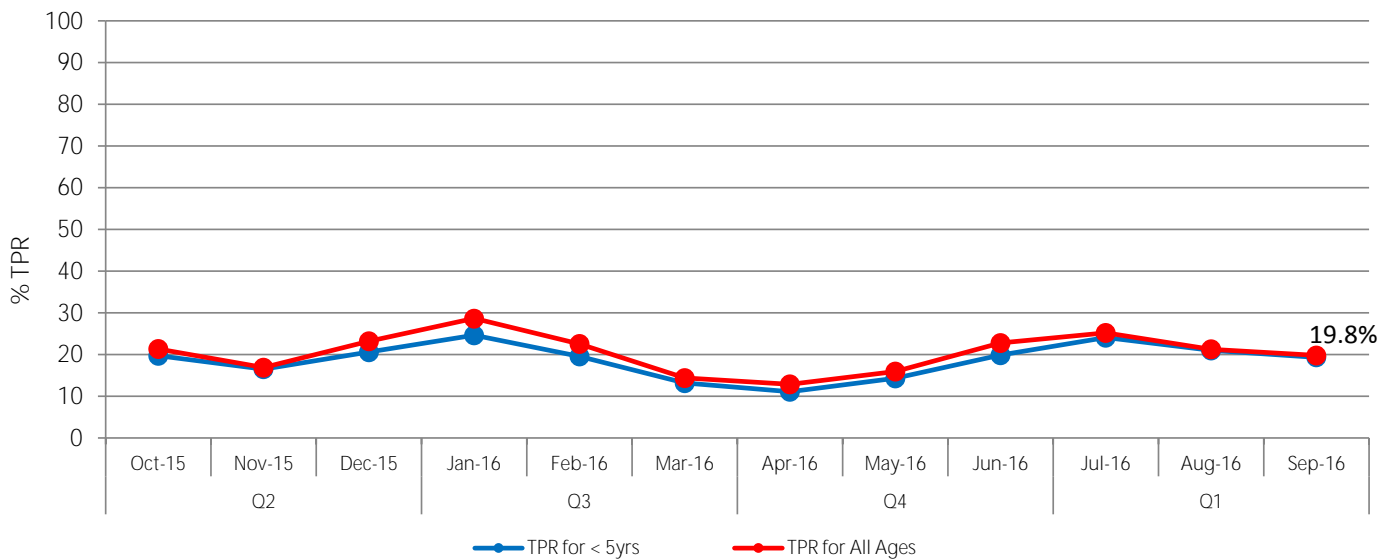
Lake Endemic:

In the Lake Endemic (high transmission) zone the TPR for both under 5 year old decreased from 52.7% in July 2016 to 48.0% in September 2016 and for all ages 49.6% in July 2016 to 44.2% in September 2016 respectively.



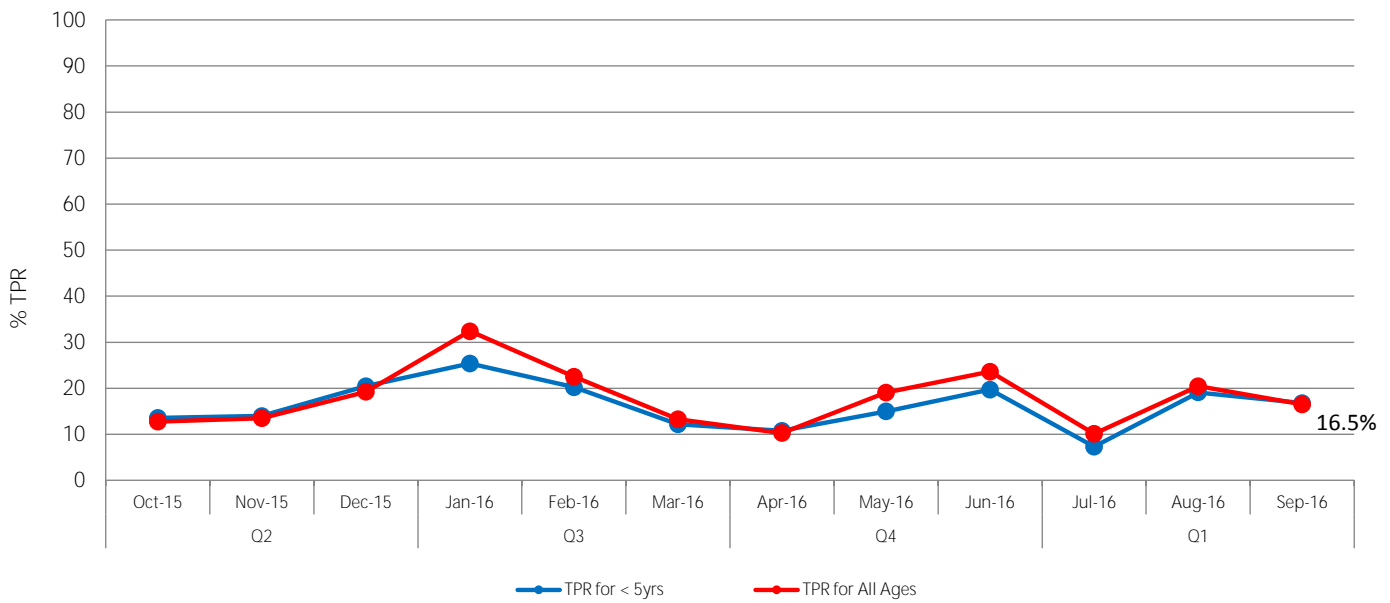
Coast endemic

In the Coast Endemic zone, the TPR for <5 years decreased from 24.1% in July 2016 to 19.3% in September 2016 and for All Ages decreased from 25.2% to 19.8% during the reporting period.



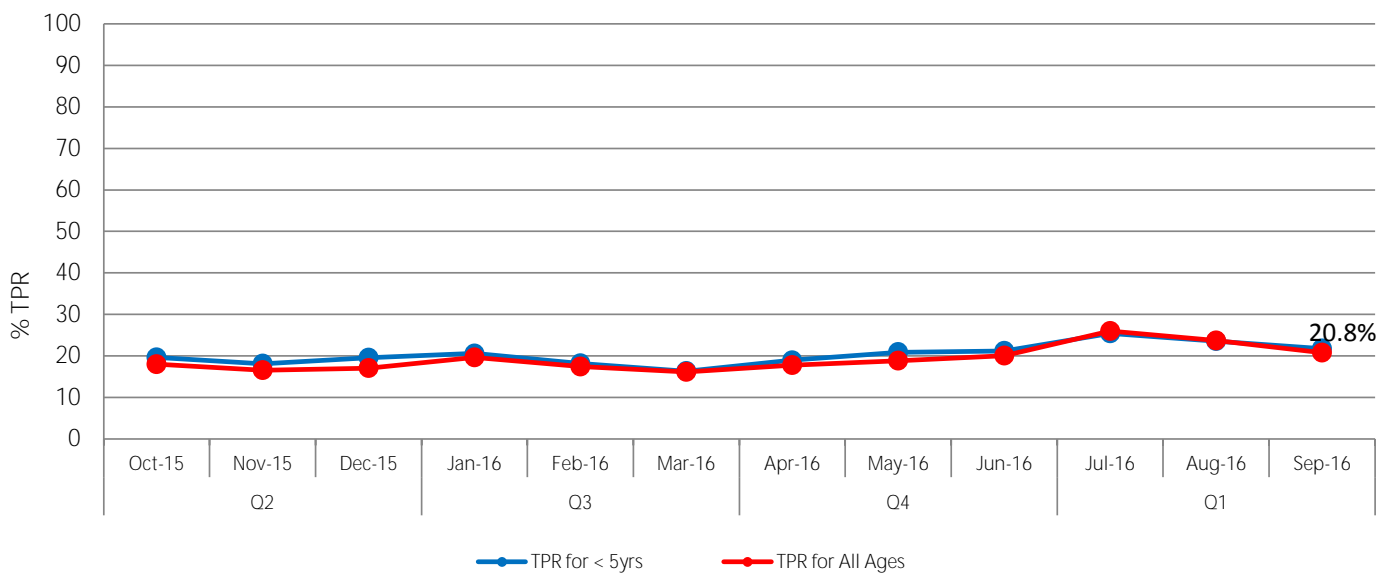
Seasonal Transmission Zone

In the Seasonal transmission zone, the TPR for both under 5 year old increased from 7.3% in July 2016 to 16.8% in September 2016 and for all ages 10.1% in July 2016 to 16.5% in September 2016 respectively.



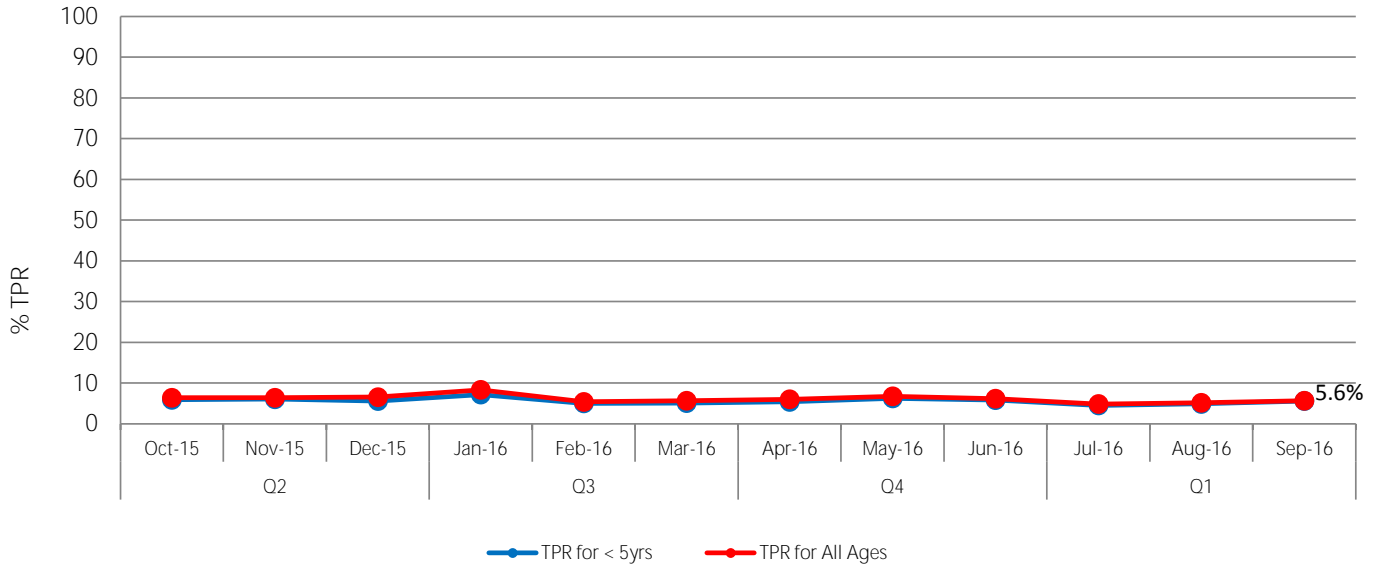
Highland Epidemic

In the Highland Epidemic prone areas of Kenya the TPR for under 5 years decreased from 25.5% July 2016 to 21.2% in September 2016. For all ages,, the TPR decreased from 26.0% to 20.8% over the same reporting period.



Low Transmission zone

This region encompasses the central region in Kenya that includes the capital city Nairobi that has the highest per-capita income in Kenya and is largely cosmopolitan. The TPR among all-ages in this region increased from 4.8% July 2016 to 5.6% in September 2016 whereas among the under-5 year old group in this zone the TPR increased from 4.5% in July to 5.6 % in September 2016. However this increase is negligible and all the malaria cases reported were imported from the high burden areas.



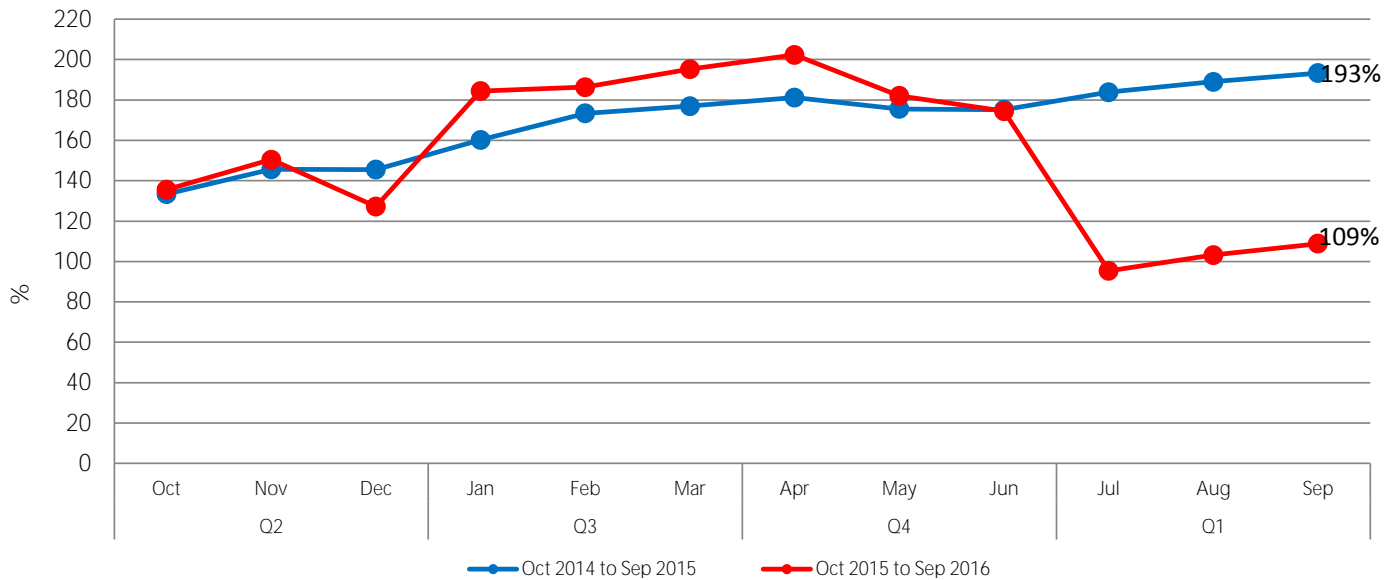
Source: DSRU

SUSPECTED MALARIA CASES TESTED WITH PARASITE-BASED TEST

The graph below depicts the percentage of the suspected malaria cases among the outpatients that underwent a laboratory diagnosis over the reporting period are presented.

This percentage presents the rate of the number of patients that were tested for malaria to the number of clients that presented to the health care provider that were suspected to have malaria parasites. The Testing Rate increased from 95% in July 2016 to 109% in September 2016.

Figure 3: Percentage of Suspected Malaria Cases Tested with Parasite Based Test



Source(s): DSRU

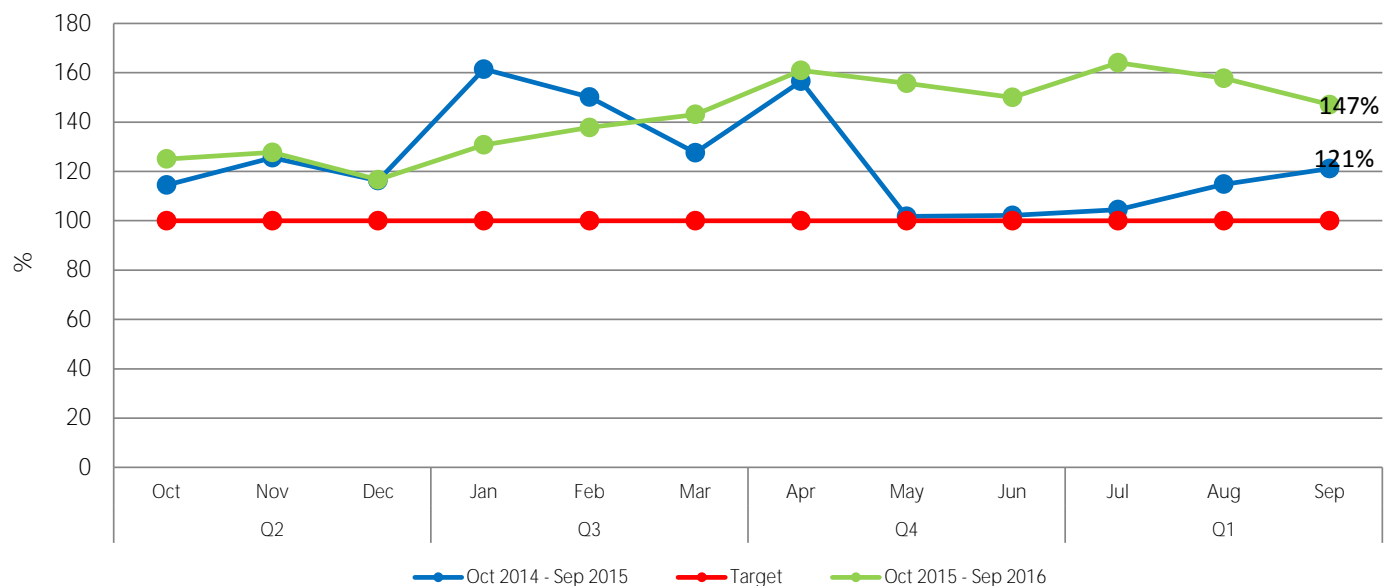
COVERAGE FOR OUTPATIENTS TREATED WITH ARTEMISININ-BASED COMBINATION THERAPY

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 4a: 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.

The outpatient cases treated with AL as a proportion of confirmed malaria cases decreased from 164% to 147% over the reporting period.

Figure 4a: Outpatient cases treated with AL as a proportion of confirmed malaria cases



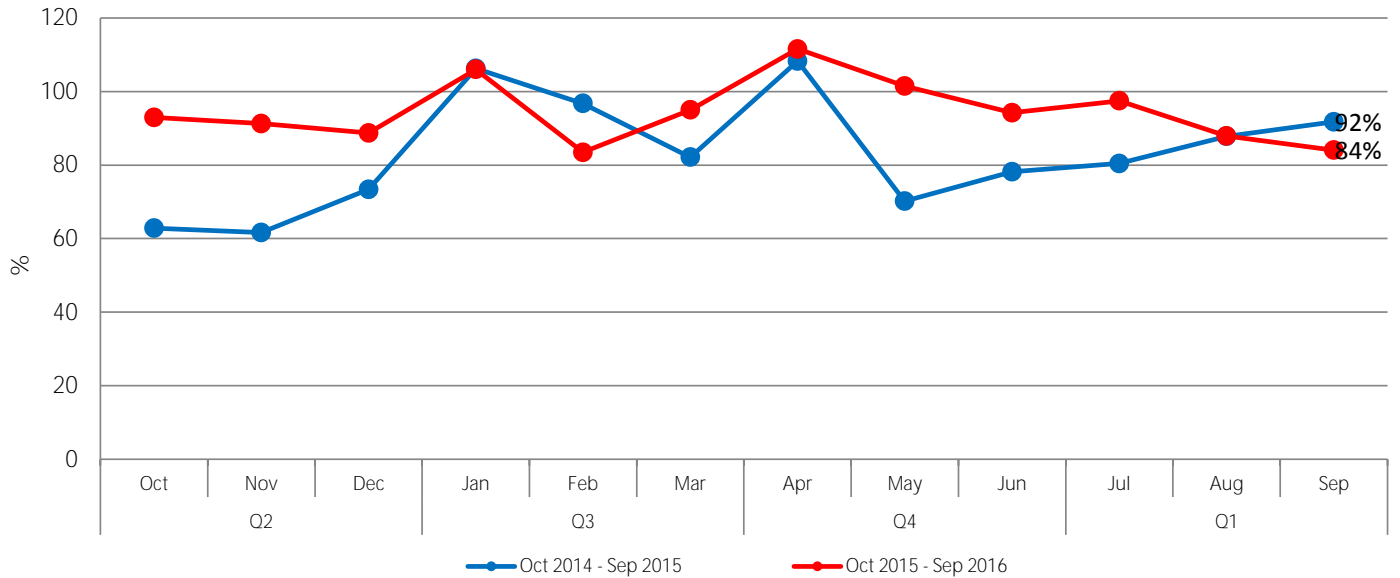
Source: LMIS/DHIS

Figure 4b shows the percentage of outpatient suspected malaria cases who received appropriate anti-malarial treatment (ACTs)

This graph measures how many of suspected malaria cases were treated using appropriate anti-malarial medicines. The diagnostics availability has been scaled up over time. It is therefore expected that all suspected malaria cases should be subjected to a malaria test, and only the malaria-parasite positive cases will be treated with AL.

The outpatient cases treated with AL as a proportion of suspected malaria cases reduced from 97% in July 2016 to 84% in September 2016.

Figure 4b: Outpatient cases treated with AL as a proportion of suspected malaria cases



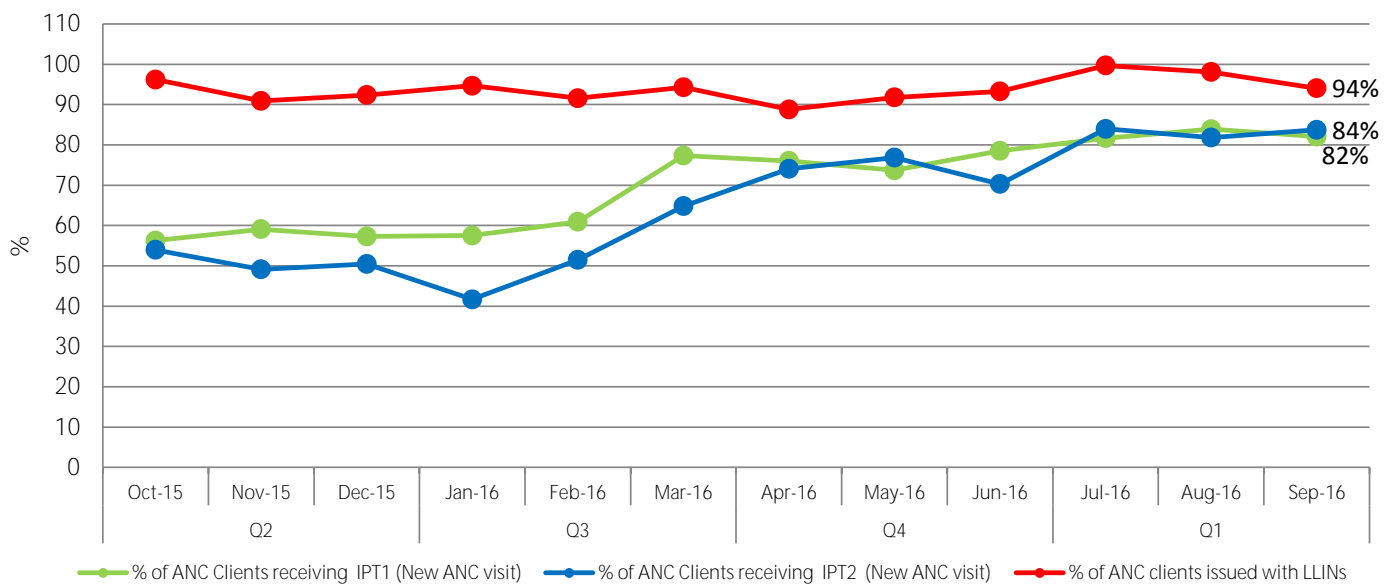
Source: LMIS/DHIS

PERCENTAGE OF COVERAGE WITH OUTPATIENTS TREATED WITH ACTS AND NUMBER OF LLINS DISTRIBUTED AT ANC

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 percentage of ANC clients issued with IPT₁ doses has increased from 82% in July 2016 to 83% in September 2016 and the percentage of ANC clients receiving IPT₂ remained steady at 84% over the reporting period. The percentage of ANC clients receiving LLINs through routine Nets distribution program in the Endemic (high transmission) zone decreased from 100% in July 2016 to 94% in September 2016

Figure 5: Percentage of Antenatal Care Clients Receiving Insecticide Treated Nets and at Least Two Doses of Intermittent Preventive Treatment (IPT₂) 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.

Figure 6: Reporting rates by Data Sources



The IDSR reporting rate for the period July to September 2016 decreased from 75% to 65%: This could be due to the fact that the e-idsr form (MOH505) moved to the DHIS . From the DHIS, the malaria commodities form Logistics Management Information System (LMIS) remained stable at 80% during the reporting period. The DHIS OPD cases reporting rates plateaued at a high of 94% during the reporting period.

Source: DHIS/DSRU/LMIS

FROM THE COUNTIES

This section provides a general overview in terms of how the counties performed in data collection and reporting for selected malaria indicators as shown in Table 1 in the reporting quarter 2 of 2015/2016. Those with double stars have low reporting completeness (below 60%) and therefore have insufficient data to represent the reality, whereas those with single stars have either overtreated or undertreated out patients. We do encourage Counties to look at their data and improve their reporting rates and quality of data. We do emphasize that patients are to be tested before being treated wherever there is diagnostic capability.

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).

Table 1: Malaria treatment by county

Region	County	# outpatient suspected Malaria cases	# outpatient confirmed malaria cases	Aggregated patients on ACTs	# outpatient cases treated with ACTs as a proportion of confirmed Malaria cases	# outpatient cases treated with ACTs as a proportion of suspected Malaria cases	Reporting rate (%) of the malaria commodity form
Western	Bungoma *	130,867	95,000	133,960	141%	102%	81%
	Busia *	191,842	111,384	142,802	128%	74%	97%
	Kakamega *	404,648	182,378	221,843	122%	55%	100%
	Vihiga	80,660	55,031	56,039	102%	69%	83%
Nyanza	Homa Bay *	189,869	123,029	279,371	227%	147%	88%
	Kisii *	72,117	29,314	104,105	355%	144%	96%
	Kisumu *	158,446	98,838	162,618	165%	103%	95%
	Migori *	180,176	113,199	240,837	213%	134%	94%
	Nyamira *	13,370	9,700	13,205	136%	99%	93%
	Siaya *	236,915	156,449	178,971	114%	76%	92%
Rift-Valley	Baringo *	37,145	13,381	39,087	292%	105%	92%
	Bomet *	8,365	1,593	8,844	555%	106%	78%
	Elgeyo-Marakwet *	12,596	7,962	6,116	77%	49%	72%
	Kajiado *	7,801	2,693	1,391	52%	18%	66%
	Kericho *	26,459	9,380	19,790	211%	75%	66%
	Laikipia *	2,754	1,239	2,218	179%	81%	67%
	Nakuru	27,390	10,121	10,364	102%	38%	78%
	Nandi *	58,785	23,045	45,952	199%	78%	79%
	Narok *	16,376	4,586	16,907	369%	103%	73%
	Samburu *	3,438	2,400	12,432	518%	362%	62%
	Trans-Nzoia *	41,053	25,731	55,192	214%	134%	90%
	Turkana *	134,033	89,006	184,743	208%	138%	81%
	Uasin Gishu *	25,566	13,214	24,072	182%	94%	86%
	West Pokot *	65,045	33,732	55,158	164%	85%	82%
Coast	Kilifi *	39,457	34,275	28,759	84%	73%	82%
	Kwale	62,131	46,189	42,329	92%	68%	82%
	Lamu *	161	90	51	57%	32%	67%
	Mombasa *	30,817	16,940	3,682	22%	12%	76%
	Taita Taveta *	991	537	989	184%	100%	81%
	Tana River *	7,115	3,484	4,969	143%	70%	81%

Region	County	# outpatient suspected Malaria cases	# outpatient confirmed malaria cases	Aggregated patients on ACTs	# outpatient cases treated with ACTs as a proportion of confirmed Malaria cases	# outpatient cases treated with ACTs as a proportion of suspected Malaria cases	Reporting rate (%) of the malaria commodity form
Eastern	Embu *	5,830	2,542	1,761	69%	30%	96%
	Isiolo	2,976	2,248	2,069	92%	70%	93%
	Kitui *	7,494	3,533	7,387	209%	99%	73%
	Machakos *	5,393	982	232	24%	4%	75%
	Makueni *	6,382	439	1,140	260%	18%	92%
	Marsabit **	3,046	1,186	622	52%	20%	22%
	Meru *	14,793	9,140	4,225	46%	29%	59%
	Tharaka Nithi	8,267	5,426	5,684	105%	69%	89%
North Eastern	Garissa *	3,707	2,026	1,482	73%	40%	68%
	Mandera **	4,206	521	1,800	345%	43%	4%
	Wajir *	1,667	546	1,346	247%	81%	69%
Central	Kiambu *	3,728	1,575	886	56%	24%	85%
	Kirinyaga *	800	68	5	7%	1%	78%
	Muranga *	207	96	188	196%	91%	71%
	Nyandarua *	485	358	241	67%	50%	98%
	Nyeri *	151	106	136	128%	90%	100%
Nairobi	Nairobi **	20,072	10,420	3,404	33%	17%	59%
	Kenya *	2,355,592	1,355,132	2,129,401	157%	90%	81%

* Counties that are not adhering to malaria treatment guidelines.

** Counties that have reporting rates below 60%

Source: LMIS / DHIS

Table 2: Reported Malaria Cases by Epidemiological zones

Epizone	quarter	Under 5 Yrs				All Ages			
		Total Cases	Total tested	Total positive	TPR	Total cases	Total tested	Total positive	TPR
Lake Endemic	15/16-1	299,572	444,505	237,792	53.50	906,074	1,364,035	693,934	50.87
	15/16-2	193,973	285,075	135,522	47.54	580,937	859,008	378,433	44.05
	15/16-3	290,436	426,988	218,891	51.26	948,376	1,362,498	679,160	49.85
	15/16-4	252,384	356,756	184,165	51.62	820,809	1,123,866	560,244	49.85
	16/17-1	440,603	333,012	167,793	50.39%	1,443,110	1,097,048	514,980	46.94%
Coast Endemic	15/16-1	21,272	77,011	20,588	26.73	70,138	256,298	75,330	29.39
	15/16-2	13,379	55,902	10,477	18.74	36,248	173,531	35,089	20.22
	15/16-3	16,233	76,199	13,764	18.06	51,174	230,402	48,647	21.11
	15/16-4	8,104	53,063	8,093	15.25	26,921	172,296	30,686	17.81
	16/17-1	38,641	72,189	15,383	21.31%	133,946	245,805	53,988	21.96%
Seasonal Transmission	15/16-1	82,956	151,438	29,295	19.34	221,199	475,588	90,245	18.98
	15/16-2	55,788	121,819	21,329	17.51	159,936	399,782	66,155	16.55
	15/16-3	46,529	114,991	21,096	18.35	167,091	399,045	87,131	21.83
	15/16-4	28,595	79,016	12,405	15.70	107,641	285,830	53,702	18.79
	16/17-1	100,869	90,352	12,481	13.81%	322,937	299,885	47,222	15.75%
Highland Epidemic Prone	15/16-1	66,579	126,899	27,450	21.63	232,700	480,409	101,590	21.15
	15/16-2	39,431	90,494	15,890	17.56	130,644	348,688	55,385	15.88
	15/16-3	72,501	135,793	25,655	18.89	239,161	499,971	90,631	18.13
	15/16-4	64,844	121,740	24,945	20.49	212,797	458,604	87,616	19.10
	16/17-1	115,206	147,970	35,172	23.77%	393,263	562,417	133,448	23.73%
Low Risk	15/16-1	5,651	43,716	1,951	4.46	19,621	148,681	7,287	4.90
	15/16-2	5,025	32,837	1,523	4.64	17,566	111,363	5,177	4.65
	15/16-3	12,543	70,776	4,495	6.35	35,404	223,588	16,140	7.22
	15/16-4	10,966	50,563	2,918	5.77	30,425	163,645	10,258	6.27
	16/17-1	19,658	58,951	2,937	4.98%	64,721	197,184	10,319	5.23%

Source: DSRU, DHIS