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Message from the Program Manager

It is my pleasure to welcome you to our 8th issue of the National Malaria Control Program's Surveillance quarterly bulletin. This issue focuses on the third quarter of 2013/2014, i.e., January to March 2014; with key malaria indicators demonstrated using six (6) surveillance core graphs. Due to the difference in malaria transmission in the country, the graphs for outpatient confirmed malaria cases and test positivity rates are disaggregated into the four malaria epidemiological zones. Also included are tables showing county data for selected malaria indicators; percentage treated, number of malaria cases epidemiological zones.

During the period under review, the Malaria Control Unit (MCU), partners and county representatives were involved in the mid-term review of the National Malaria Strategy 2009–2017(NMS). This was a five day meeting which reviewed the findings and recommendations of the mini review held in July 2013; shared the results of a peer review undertaken during the Roll Back Malaria (RBM) led peer review of strategic plans workshop; developed a framework for the revised Kenya Malaria Strategic (KMS); identified areas of the NMS 2009–2017 that will need revision; and updated the county health directors on the progress made towards the completion of the Mid-term review. A series of stakeholder meetings to finalize the gap analysis and costing will be held in the next quarter.

In the case management section, private sector Health Workers training was conducted through outsourced training firms supported by Global Fund Round 4 AMFM grants. The overall goal of the training was to improve case management of patients who seek services at private facilities. A target of 5880 health workers was initially planned for and a total of 6010 HWs were trained by end of March 2014. In addition to these trainings 420 laboratory staff in the public health sector from across the country were trained on parasitological diagnosis of malaria. Furthermore, 40 laboratory technologists drawn from the Lake endemic regions were .trained in quality assurance of parasitological diagnosis of malaria.

Malaria surveillance TOT trainings for the counties continued with a total 85 County Health Management Teams (CHMTs) members from 25 counties trained and all the teams prepared and submitted plans to roll down to the health workers the surveillance training. MCU plans to train seven (7) more counties CHMTs from Rift valley and also plans to review and finalize the county training plans, prepare Gantt chart for health workers surveillance trainings in those counties. These malaria surveillance trainings aim to equip health workers with the necessary knowledge, skills and attitudes that will enable them to effectively carry out malaria surveillance activities.

To enhance entomological capacity at county level, 3 officers from each of the counties of Isiolo, Embu, Kirinyaga Machakos and Kitui were trained in collecting and identifying mosquitoes. The training will be extended to the remaining counties.

During the quarter, a steering committee for the second Kenya National Malaria Forum (KNMF 2014) comprising of members from MCU and partners was formed and planning activities for this event are currently on-going. The forum is to be held every two (2) years to provide opportunity for malaria researchers in Kenya and malaria control program implementers to discuss, identify and share research findings and technical updates to provide tangible recommendations that will be taken as Kenya moves towards achieving the vision of a malaria free country. The first KNMF was held in 2011 with a theme of evidence to action. The second KNMF was not held as planned because the dates conflicted/clashed with the 6th MIM conference in October 2013.

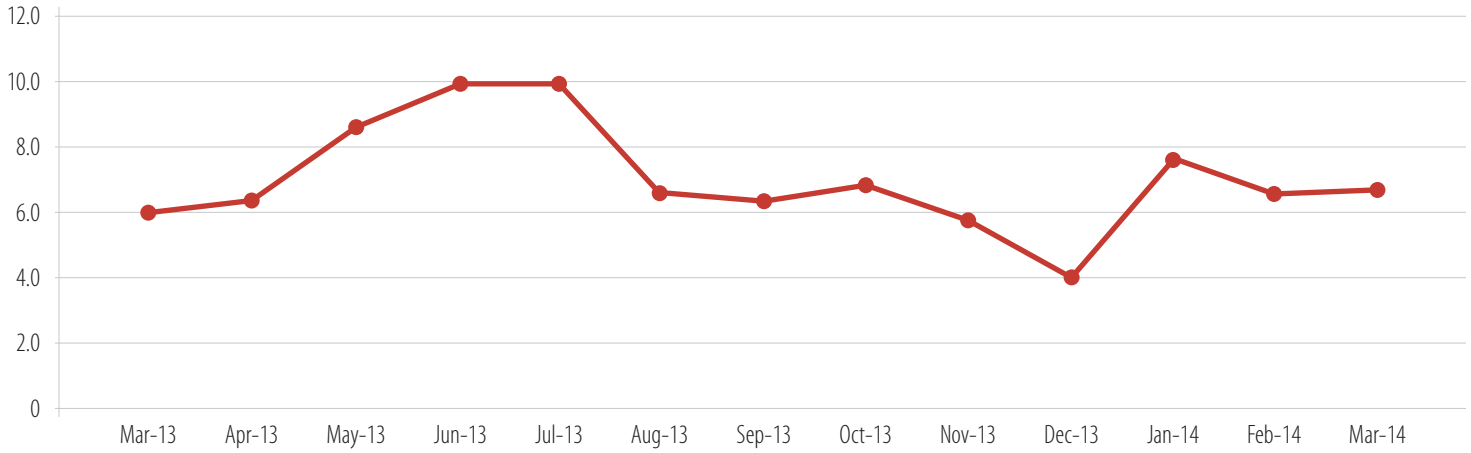
OUTPATIENT CONFIRMED MALARIA CASES

Figure 1a shows the number of parasitologically confirmed outpatient malaria cases per 1000 population resident in Kenya. The cases are confirmed either by microcopy or RDT.

The average monthly number of confirmed outpatient malaria cases for quarter 3 of 2013/2014 was 3.9 cases per 1000 population and was higher as compared with both the average number for quarter 2 of 2013/2014; 2.9 cases per 1000 of the population and the same period a year ago; 3.2 cases per 1000 of the population. However, there was a decrease in the number of confirmed outpatient malaria cases from January 2014 (4.4 cases/1000 pop.) to March 2014 (3.5 cases/1000 pop.).

The higher number of confirmed cases during the quarter could in part be explained by the fact that during the preceding quarter there was a countrywide health workers strike that hindered service delivery at the public health facilities in the country.

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



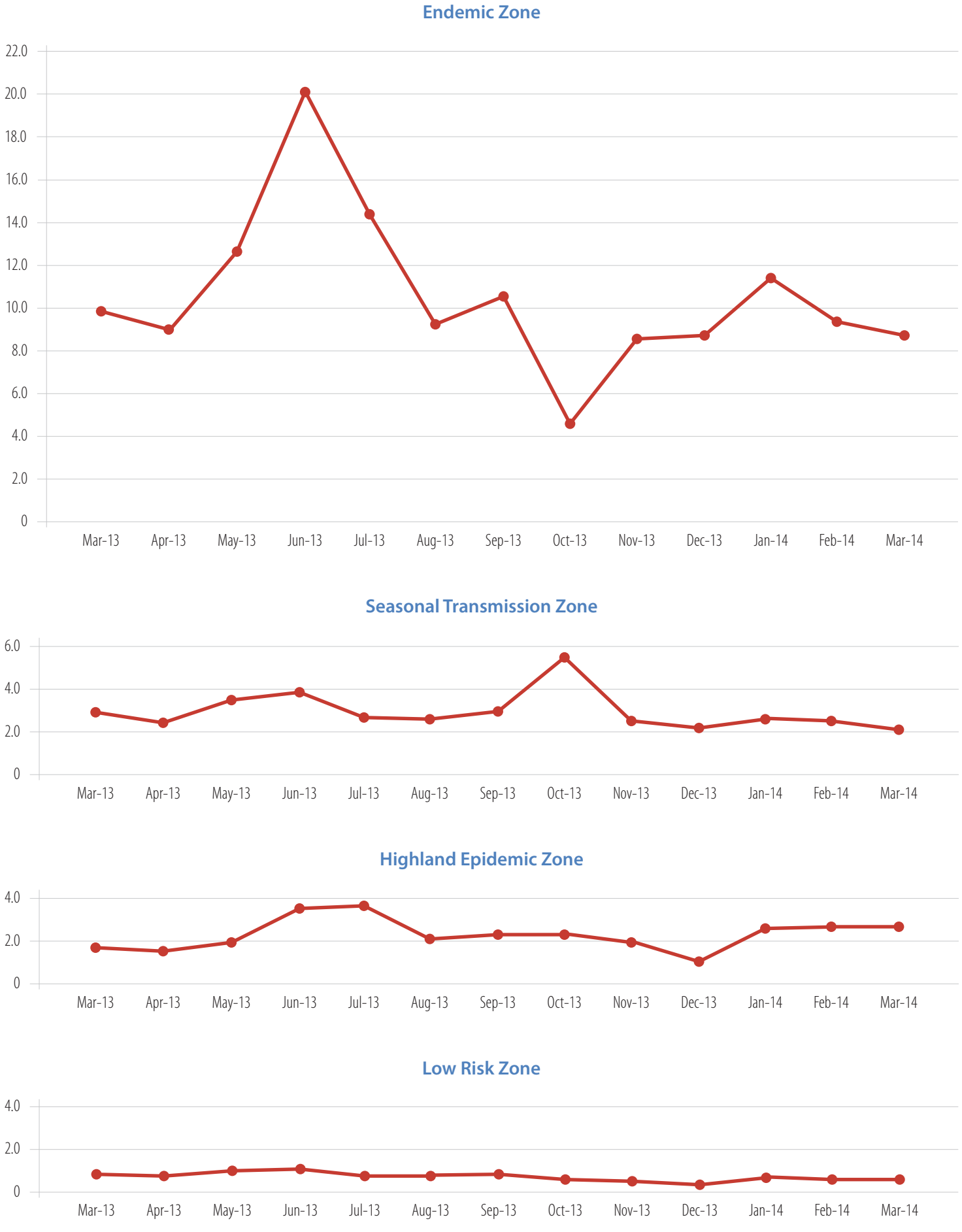
Sources: DDSR, Census population projection 2014

Figure 1b shows the number of parasitologically confirmed outpatient malaria cases per 1000 population by the malaria epidemiological zones. Ideally, a rate of less than 1 case per 1000 population sustained over a 12-month period indicates readiness for transitioning to the elimination phase. The average monthly number of confirmed outpatient malaria cases per 1,000 population in endemic, seasonal transmission, highland epidemic prone and low risk areas was observed to be higher in quarter 3 of 2013/2014 (7.3 and 1.7 cases/1000 population, respectively) as compared to the previous quarter (9.8 and 2.6 cases/1000 population, respectively) and during the same period last year (7.6 and 1.4 cases/1000 population, respectively).

For the seasonal transmission zone, the average monthly number of confirmed outpatient malaria cases per 1,000 population was observed to be lower in quarter 3 of 2013/2014 (2.4 cases/1000 population) as compared with both quarter 2 of 2013/2014 and the same period last year (7.3 and 1.7 cases/1000 population, respectively).

On the other hand, the average monthly number of confirmed outpatient malaria cases per 1,000 population in the low risk area in quarter 3 of 2013/2014 (0.6 cases/1000 population) was similar to both quarter 2 of 2013/2014and during the same period last year (0.5 and 0.8 cases/1000 population, respectively).

Figure 1b: Number of Outpatient Confirmed Malaria Cases per 1,000 Population by Epidemiological Zone



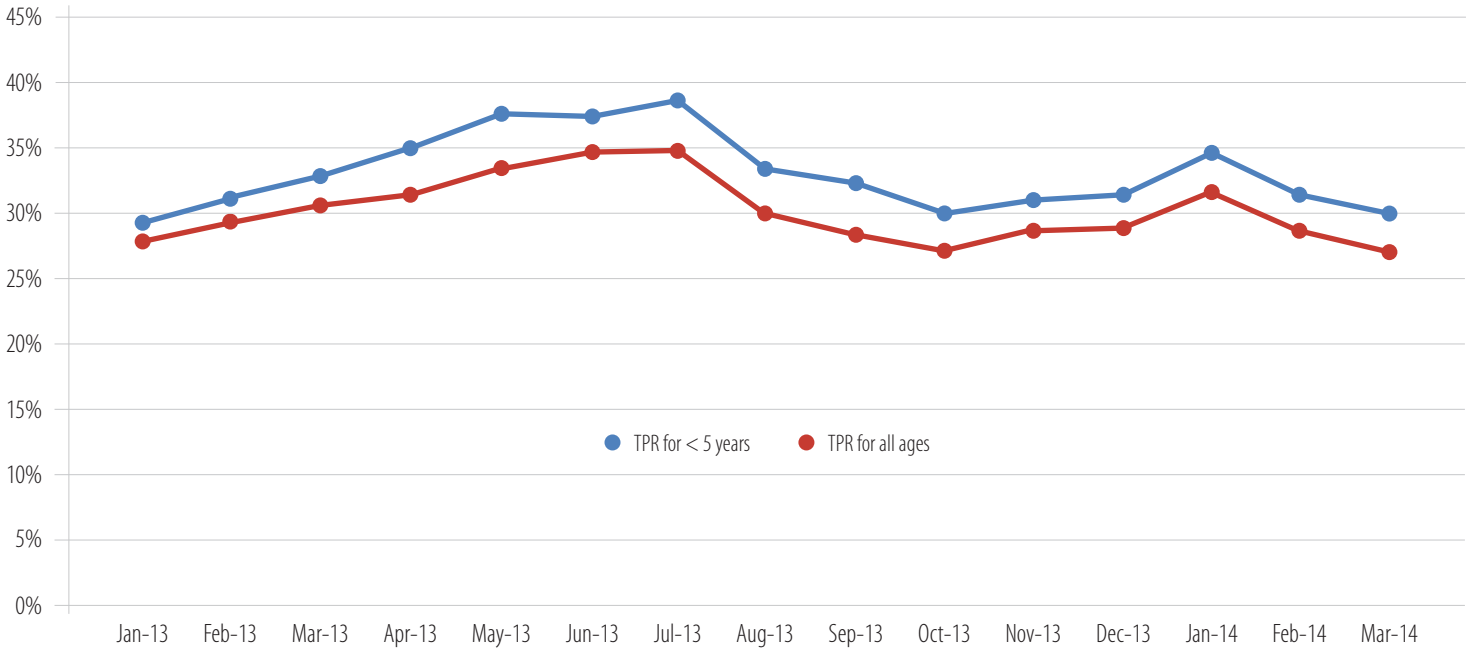
Sources: DDSR, Census population projection 2014

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. The graphs are based on data from the weekly reports by the department of diseases surveillance and response (DDSR). 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 average monthly outpatient test positivity rate (TPR) in the country for both under-fives and all age groups, was observed to be slightly higher, but with a decreasing trend, in quarter 3 of 2013/2014 (32% and 29%, respectively) as compared to the previous quarter of 2013/2014 (31% and 28%, respectively) and during the same period last year (31% and 29%, respectively).The slightly higher TPR could have been contributed by the short rains that occurred in late 2013.

Figure 2a: Outpatient TPR for < 5 Years and All Ages



Source: DDSR

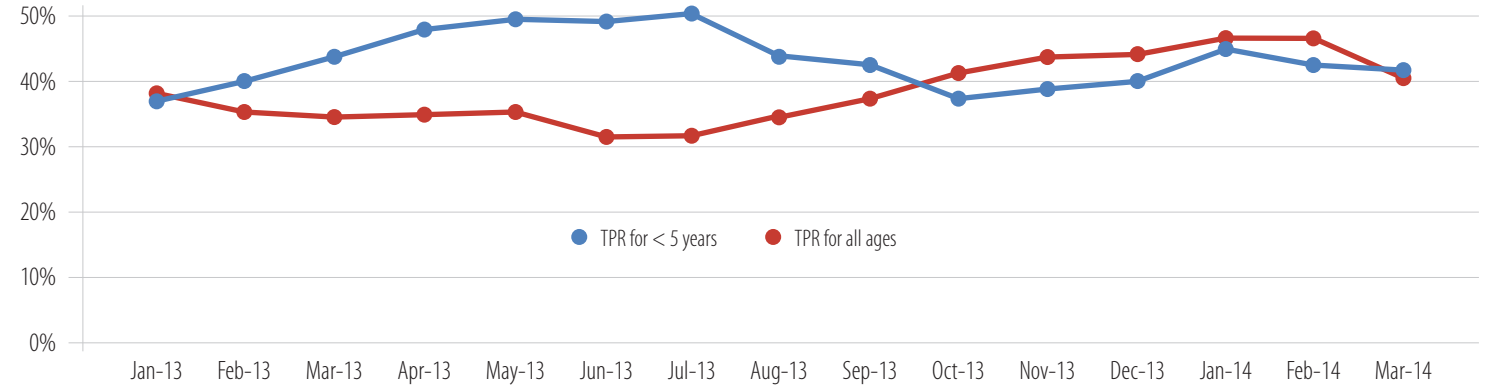
Figure 2b shows outpatient TPR disaggregated by different epidemiological zones. The average monthly outpatient TPR in the endemic zone for both under-fives and all age groups, was observed to be slightly higher in quarter 3 of 2013–14 (43% and 39%, respectively) as compared with quarter 2 of 2013–14 (39% and 36%, respectively) and also higher as compared with the same period last year (40% and 37%, respectively).

For the seasonal transmission zone, the average monthly outpatient TPR for both under-fives and all age groups, was observed to be lower in quarter 3 of 2013–14 (25% and 24%, respectively) as compared with quarter 2 of 2013–14 (26% and 26%, respectively) and same period last year (33% and 34%, respectively).

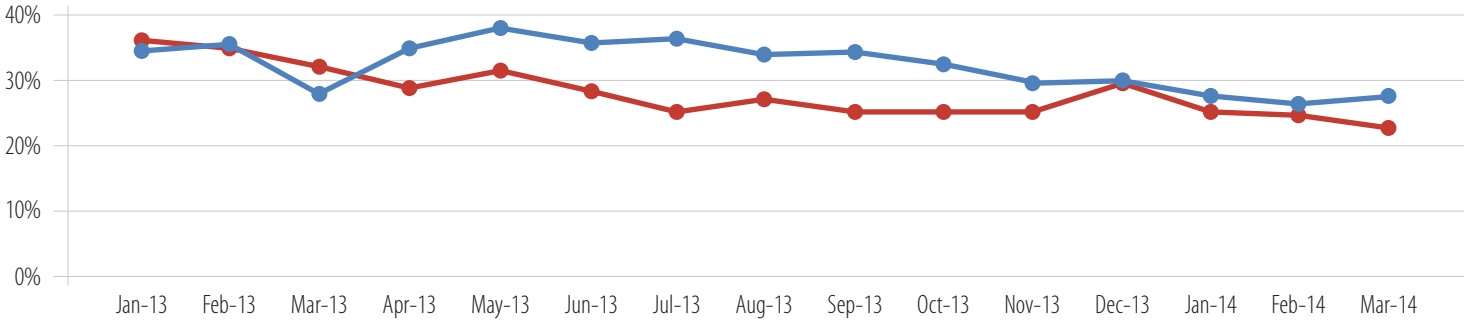
On the other hand, the average monthly TPR for both highland epidemic and low risk areas in quarter 3 of 2013–14 was similar to quarter 2 of 2013–14 (18% and 10%, respectively), but higher than same period last year (15%) for highland epidemic and slightly lower in the low risk areas (12%).

Figure 2b: Outpatient TPR for < 5 Years and All Ages by Malaria Epidemiological Zones

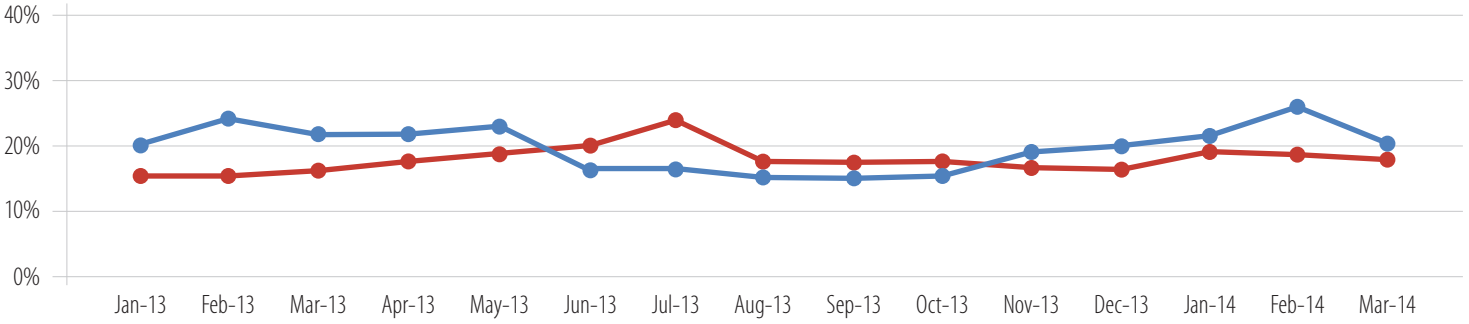
Endemic Zone



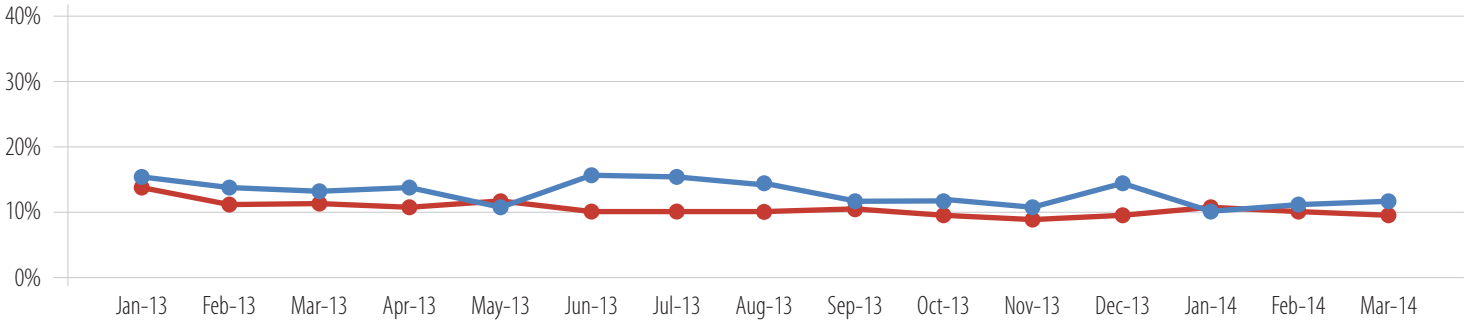
Seasonal Transmission Zone



Highland Epidemic Zone



Low Risk Malaria Zone

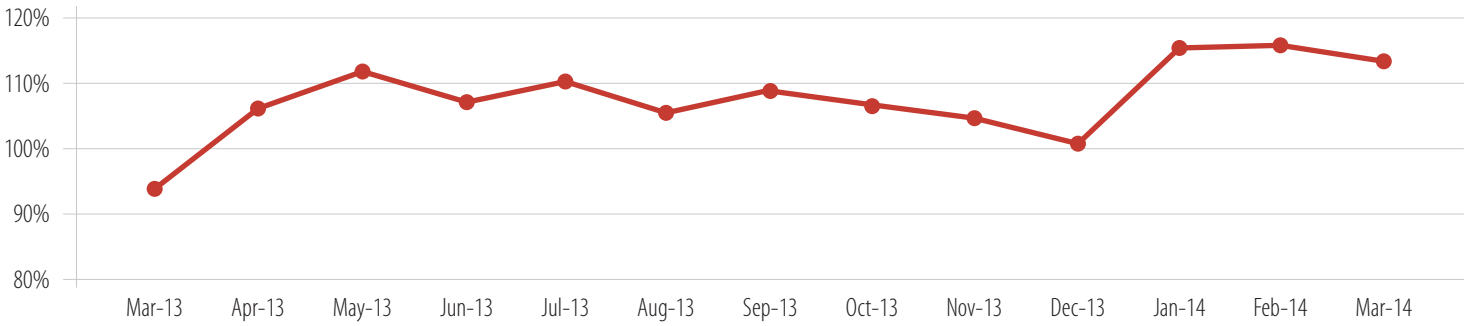


Source: DDSR

SUSPECTED MALARIA CASES TESTED WITH PARASITE-BASED TEST

The proxy indicator for malaria diagnostic capability of health facilities is expressed as the percentage of suspected malaria OPD cases that underwent a parasitological test. As shown in Figure 3, the average monthly testing rate during quarter 3 of 2013–14 was 114%.

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



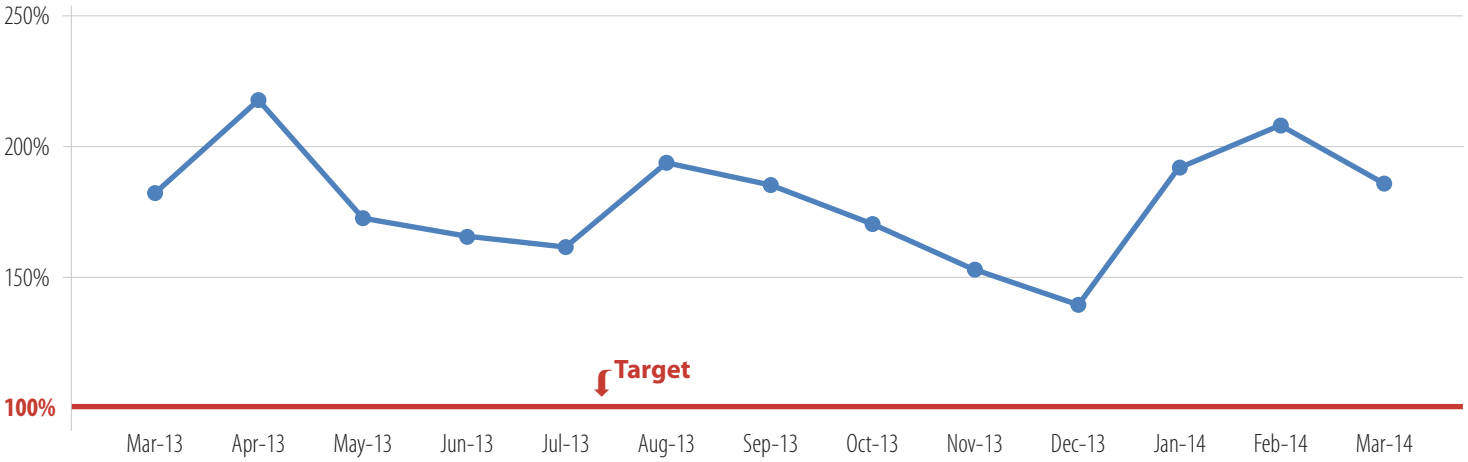
Source: DDSR

COVERAGE FOR OUTPATIENTS TREATED WITH ARTEMISININ-BASED COMBINATION THERAPY

Kenya has adopted the policy of test before treatment and AL should only be administered to patients who are parasitologically tested for malaria and the results are positive. The ability of health facilities to achieve this has in the past been hampered by low coverage of the rapid diagnostic test kits (RDTs) or microscopy. Graph 4 shows the percentage of outpatient cases that were treated with AL divided by the number of confirmed malaria cases (positive parasitological results) expected to be treated.

The average monthly percentage of over-treatment for parasitologically confirmed malaria cases was observed to have increased from 154% in the preceding quarter to 195% during this quarter (Q3 of 2013-14), but lower than the same period last year (213%).

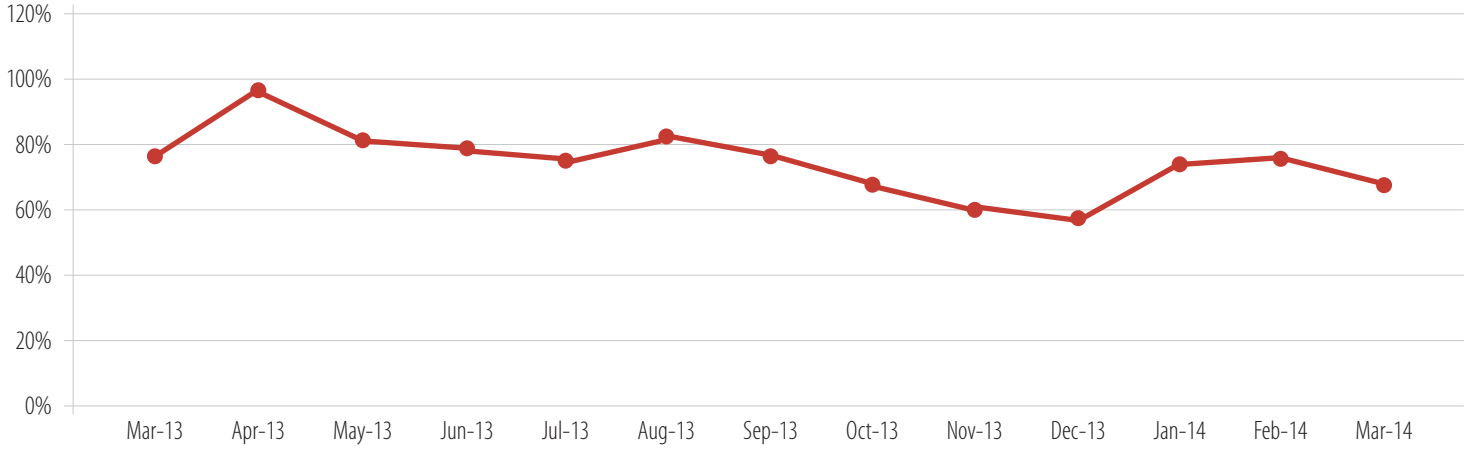
Figure 4a: Percentage of Coverage with Confirmed malaria Outpatient Cases Treated with AL



Sources: LMIS/DHIS

Figure 4b shows the percentage of outpatient suspected malaria cases who received an ACTs. The average monthly percentage of over-treatment of all suspected malaria cases was observed to have increased from 61% in the preceding quarter to 72% during this quarter (Q3 of 2013–14), but lower than the same period last year (79%).

Figure 4b: Percentage of Outpatient Suspected Malaria Cases Treated with Artemisinin-Based Combination Therapy



Source: LMIS/DHIS

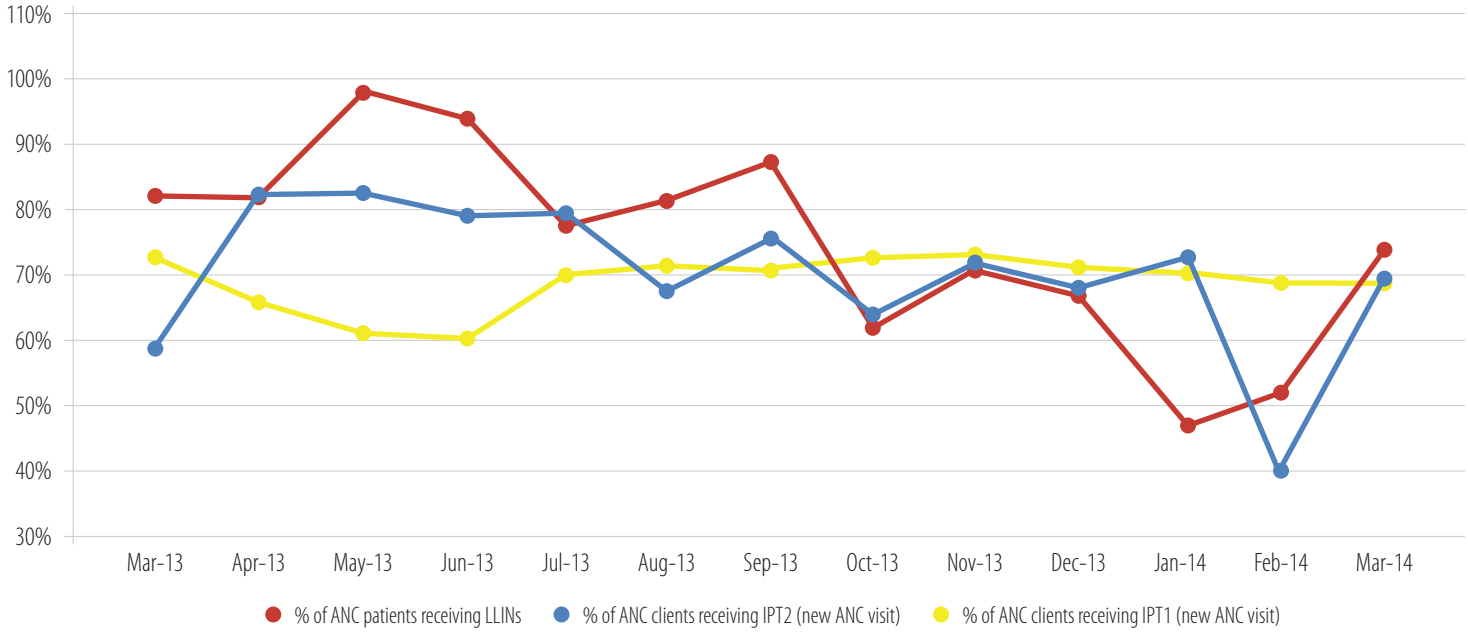
PERCENTAGE OF OUTPATIENTS TREATED WITH ACTS AND NUMBER OF LLINS DISTRIBUTED AT ANC

Malaria in pregnancy is prevented through a combination of strategies that together are aimed at reducing maternal and perinatal morbidity and mortality occasioned by malaria. The strategies have been integrated into the antenatal care (ANC) package that comprises of Intermittent Presumptive Treatment of Malaria in Pregnancy (IPT) with of SP, provision of Long Lasting Insecticide-treated Nets (LLINs), and the provision of prompt diagnosis and treatment of fever.

The average monthly percentage of expectant mothers who received IPTp1 in quarter 3 of 2013–14 (80%) was slightly lower than both quarter 2 of 2013–14 and during the same period last year (83%). Similarly, the average monthly percentage of expectant mothers who received IPTp2 in quarter 3 of 2013–14 (69%) was lower than quarter 2 of 2013–14 (81%) and during the same period last year (71%). This could be due to the corrective measures that have been put in place in the reporting of IPT2. Previously IPT3 and 4 were all recorded as IPT2 thus giving a higher rate.

On the other hand, the average monthly percentage of expectant mothers who received LLINs in quarter 3 of 2013–14 (67%) was lower than both quarter 2 of 2013–14 (77%) and during the same period last year (90%).

Figure 5: Percentage of Antenatal Care Clients Receiving Insecticide Treated Nets and at Least Two Doses of Intermittent Preventive Treatment (IPTp2)



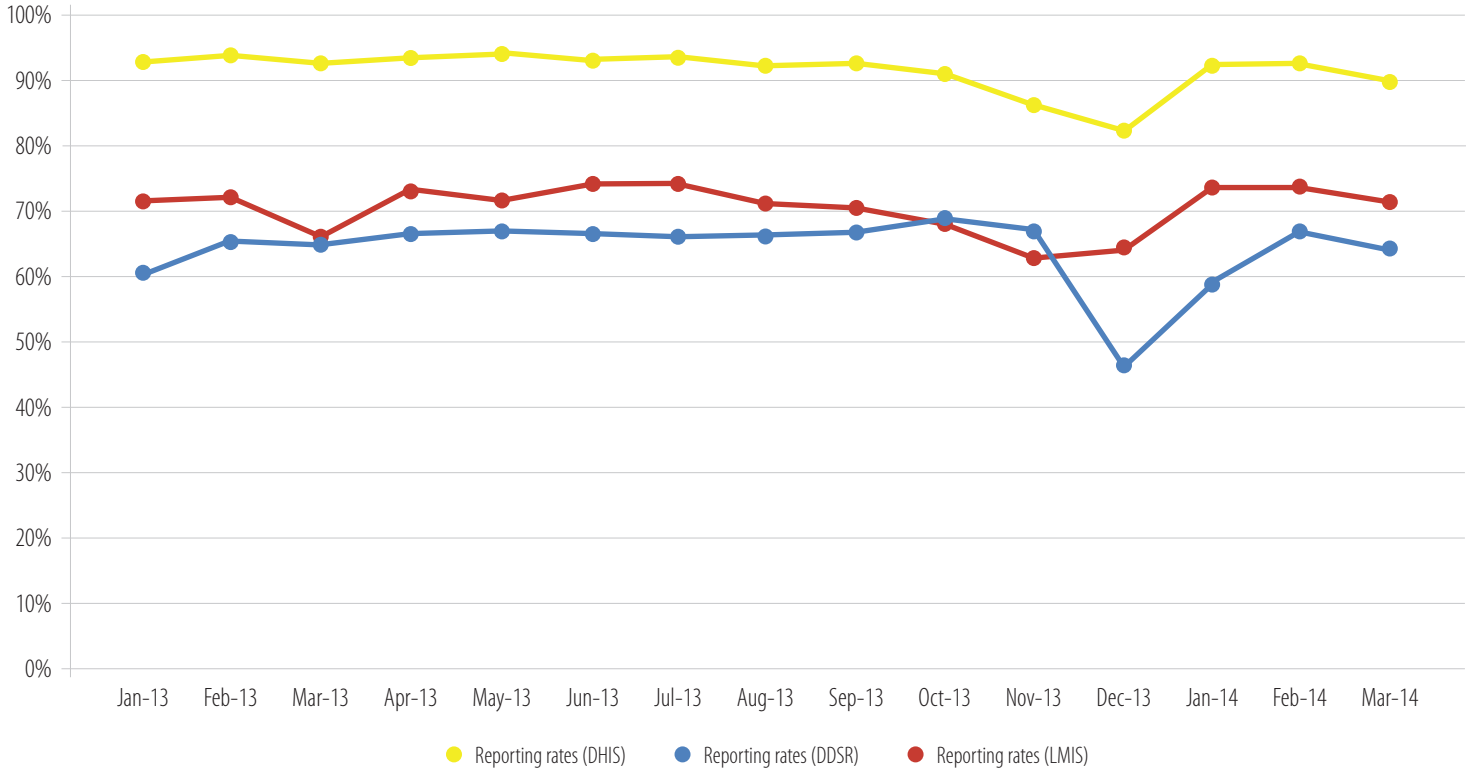
Source: DHIS

REPORTING RATES BY DATA SOURCES

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

The average reporting rates for both DHIS and LMIS has increased to 91% and 58%, from 86% and 52% respectively.

Figure 6: Reporting Rates



Source: DHIS/DDSR/LMIS

From the Counties

This section is an overview of how the counties performed in data collection and reporting for selected malaria indicators as shown in Table 1 in the reporting quarter 3 of 2013/2014. The treatment guidelines emphasize testing before treatment of malaria.

Table 1: Malaria Treatment by County

Region	County	No. out-patient suspected malaria cases	No. out-patient confirmed malaria cases	Aggregated patients on AL	% of outpatient suspected malaria cases treated with ACT	% of outpatient confirmed malaria cases treated with aACT	Reporting Rates (%)
Western	Bungoma*	120,106	76,373	144,965	121	190	87
	Busia*	132,541	60,636	118,414	89	195	87
	Kakamega*	235,989	86,630	164,076	70	189	58
	Vihiga*	81,949	27,628	85,310	104	309	98
Nyanza	Homa Bay*	213,007	82,348	214,528	101	261	89
	Kisii *	112,952	18,653	78,365	69	420	80
	Kisumu*	129,847	52,434	94,912	73	181	66
	Migori*	225,669	90,640	235,167	104	259	78
	Nyamira*	31,550	4,603	27,703	88	602	71
	Siaya	193,818	76,465	182,602	94	239	89
Rift Valley	Baringo*	35,807	7,964	32,302	90	406	63
	Bomet*	30,049	2,116	20,913	70	988	65
	Elgeyo/Marakwet *	12,479	2,749	817	7	30	14**
	Kajiado*	23,756	6,900	3,472	15	50	52**
	Kericho*	63,396	8,384	41,760	66	498	63
	Laikipia*	7,098	1,891	4,612	65	244	77
	Nakuru*	62,767	22,317	23,133	37	104	78
	Nandi*	69,674	11,171	25,435	37	228	32**
	Narok*	36,767	9,196	18,710	51	203	41**
	Samburu	3,483	2,709	2,749	79	101	43**
	Trans Nzoia	50,244	25,665	18,956	38	74	35**
	Turkana	41,433	18,040	18,313	44	102	33**
	UasinGishu*	55,965	14,680	32,610	58	222	61
	West Pokot*	30,669	5,318	13,850	45	260	43**
Coast	Kilifi*	39,726	21,223	23,481	59	111	99
	Kwale*	46,995	17,490	37,226	79	213	91
	Lamu *	1,583	731	161	10	22	93
	Mombasa*	33,612	14,420	4,907	15	34	100
	TaitaTaveta*	9,261	2,139	3,153	34	147	20**
	Tana River*	5,679	2,600	1,097	19	42	35**
Eastern	Embu	20,897	11,327	11,375	54	100	72
	Isiolo*	8,699	3,269	6,620	76	203	92
	Kitui*	66,807	23,080	49,751	74	216	70
	Machakos*	20,369	3,419	10,179	50	298	80
	Makueni*	37,761	4,285	34,299	91	800	85
	Marsabit *	3,454	947	544	16	57	9**
	Meru	112,182	61,144	26,834	24	44	70
	Tharaka-Nithi	49,807	17,666	12,367	25	70	57**

Region	County	No. out-patient suspected malaria cases	No. out-patient confirmed malaria cases	Aggregated patients on AL	% of outpatient suspected malaria cases treated with ACT	% of outpatient confirmed malaria cases treated with aACT	Reporting Rates (%)
North Eastern	Garissa	5,513	2,431	1,989	36	82	51**
	Mandera *	7,210	1,230	0	0	0	16**
	Wajir	3,375	2,651	1,555	46	59	29**
Central	Kiambu	8,194	3,203	1,027	13	32	57**
	Kirinyaga*	7,820	407	1,179	15	290	83
	Murang'a*	3,428	413	1,683	49	408	83
	Nyandarua*	3,164	1,323	2,475	78	187	92
	Nyeri*	126	70	117	93	167	83
Nairobi	Nairobi	30,121	17,405	7,690	26	44	72
	Total	*1,320,496*	*1,388,036*	*389,152*	*1,133,908*	*105*	*140,298*

Source: DHIS

** Counties that treated more patients than the number of suspected and confirmed malaria cases*

*** Counties that have reporting rates below 60%*

Table 2: Reported Malaria Cases by Epidemiological Zones

This table shows suspected and confirmed malaria cases that were treated as per the national guidelines.

Zones	Quarter	No. cases < 5 years	No. tested < 5 years	Positive <5 years	TPR for < 5 years	Total no. cases all ages	Total no. tested all ages	Total no. positive all ages	TPR for all ages
Endemic	Qtr3 12/13	359,525	263,615	108,137	41	864,273	684,359	261,907	38
	Qtr4 12/13	418,903	398,240	195,762	49	1,046,465	1,066,682	481,872	45
	Qtr1 13/14	353,270	335,044	154,586	46	953,801	943,034	400,802	43
	Qtr2 13/14	272,405	251,326	100,885	40	726,600	693,328	257,856	37
	Qtr3 13/14	391639	316392	136519	43	1096294	895943	352747	39
Seasonal Transmission	Qtr3 12/13	105,172	91,025	30,584	34	310,157	279,425	96,160	34
	Qtr4 12/13	99,933	97,497	28,267	29	316,277	331,412	97,701	29
	Qtr1 13/14	88,138	89,936	24,445	27	293,938	322,387	83,002	26
	Qtr2 13/14	63,852	68,948	17,955	26	200,860	234,265	60,922	26
	Qtr3 13/14	84014	92022	23511	26	260618	303710	73717	24
Highland Epidemic	Qtr3 12/13	116,337	78,878	12,518	16	318,888	227,403	35,557	16
	Qtr4 12/13	119,711	100,120	19,756	20	336,438	298,100	56,377	19
	Qtr1 13/14	116,062	104,913	22,825	22	354,838	328,861	65,341	20
	Qtr2 13/14	96,071	81,773	15,176	19	280,483	247,585	42,520	17
	Qtr3 13/14	121608	110694	20890	19	380076	350543	65393	19
Low Risk Malaria Areas	Qtr3 12/13	56,751	85,312	10,443	12	163,889	255,251	30,428	12
	Qtr4 12/13	58,665	104,138	12,548	12	168,917	319,684	35,022	11
	Qtr1 13/14	46,707	82,107	9,641	12	135,423	270,098	28,167	10
	Qtr2 13/14	32,124	62,319	6,255	10	87,967	193,014	18,331	9
	Qtr3 13/14	30342	72815	7622	10	86205	228897	23630	10