Malaria Surveillance Bulletin

MALARIA CONTROL UNIT ▪ NAIROBI, KENYA ▪ ISSUE 10 ▪ SEPTEMBER 2014

The **MALARIA SURVEILLANCE BULLETIN** is produced by the Malaria Control Unit and is a quarterly production.

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MEASURE Evaluation-PIMA in Kenya is funded by USAID through associate award 623-12-000002 and implemented by the Carolina Population Center at the University of North Carolina at Chapel Hill, with Futures Group, ICF International, Management Sciences for Health, and Tulane University. The views expressed in this publication do not necessarily reflect the views of USAID or the United States government.

Message from the Program Manager

Welcome to the 10th issue of the Malaria Surveillance Bulletin produced by Kenya's Malaria Control Unit (MCU). This issue focuses on the first quarter of the financial year 2014/2015—July to September 2014—with key malaria indicators demonstrated using six surveillance core graphs. Due to differences in malaria transmission in the country, the graphs for outpatient confirmed malaria cases and test positivity rates (TRP) 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 period, His Excellency the President of Kenya Uhuru Kenyatta launched the mass net distribution campaign in Migori County on the 8th of September 2014. The first phase of the distribution then commenced in five counties, namely Migori, Kisumu, Siaya,Vihiga, and Homabay. This distribution campaign will continue until 2015. There were 5,842 health workers in the public health sector trained on malaria case management across the country. The distribution of anti-malarials and rapid diagnostic tests also continued in this period. Program staff finalized the cost of the Kenya Malaria Strategy, and this will be shared with the counties in conjunction with the monitoring and evaluation plan in the next quarter.

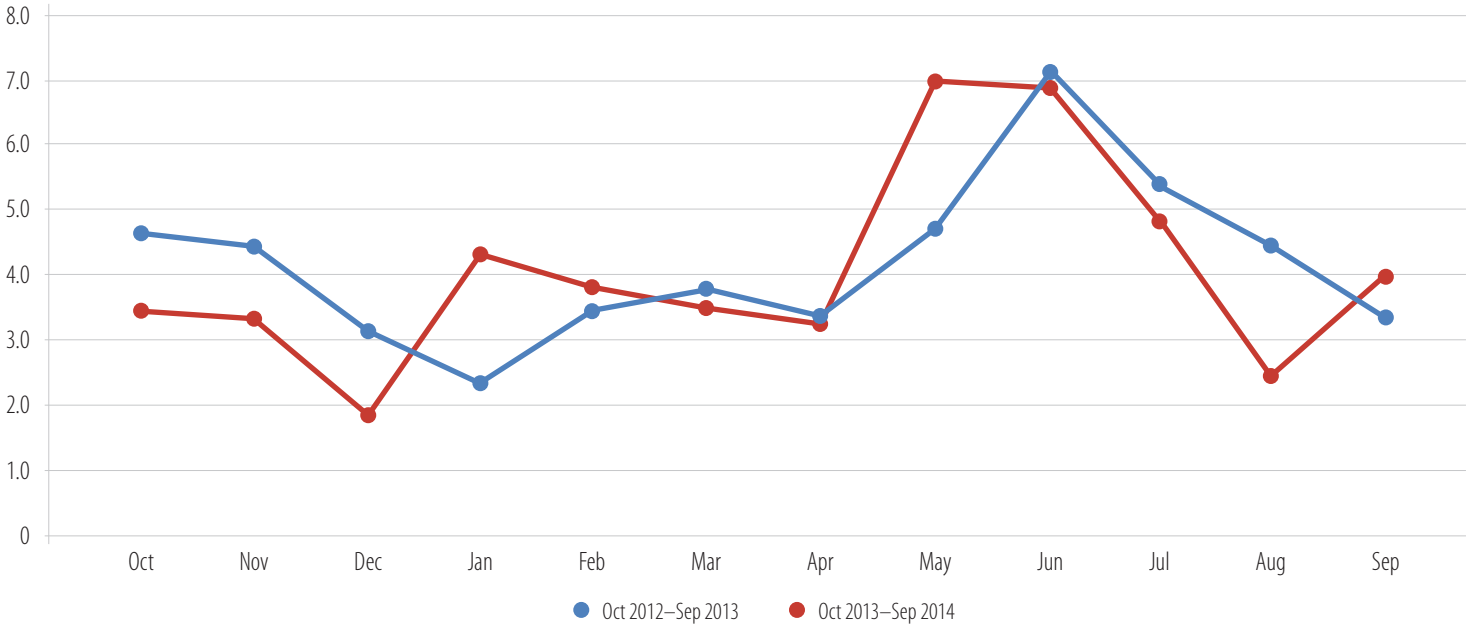
We hope that you will use these bulletins to help you understand the situation in your transmission area and counties, thereby helping you make decisions. We encourage you to maintain high reporting rates (above 80%) so that your data is representative of your county, and we also encourage you to also to do similar analysis with your surveillance and district health information software (DHIS) data at both the county and sub-county levels.

Photo by David Mutua, USAID Kenya

OUTPATIENT CONFIRMED MALARIA CASES

Figure 1a shows the number of outpatient suspected malaria cases that are confirmed to have malaria parasite by microscopy or RDT per 1,000 people residing in Kenya. The graph shows that confirmed cases reduced in August 2014 but picked up in September 2014. In comparison to 2013, the confirmed cases were less.

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

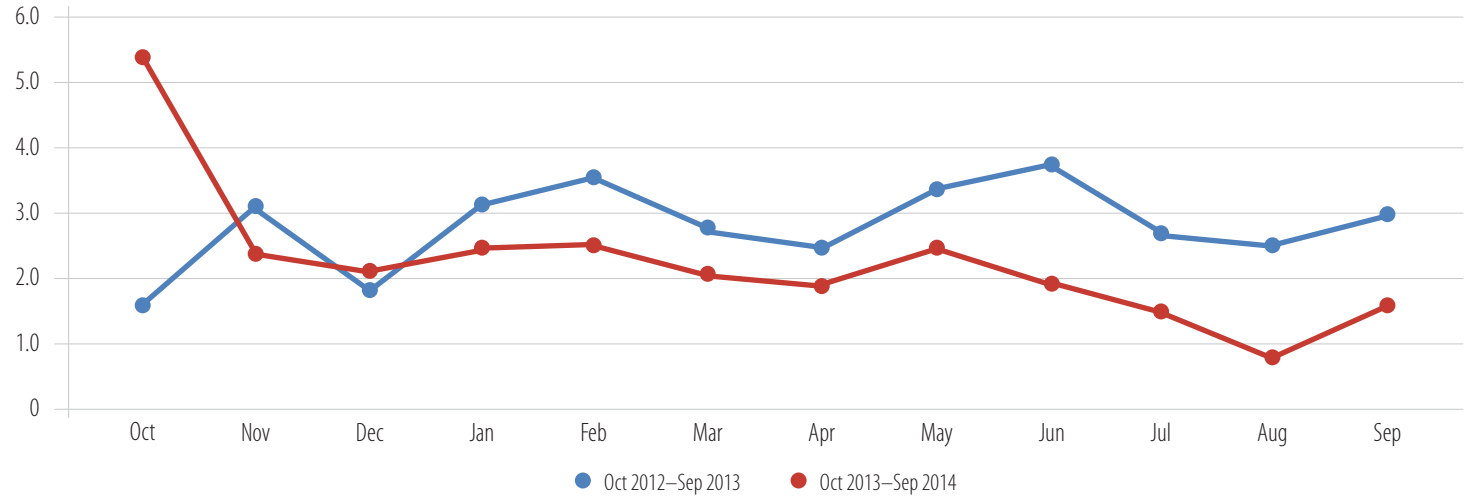


Sources: DSRU, KNBSProjection 2009 Census

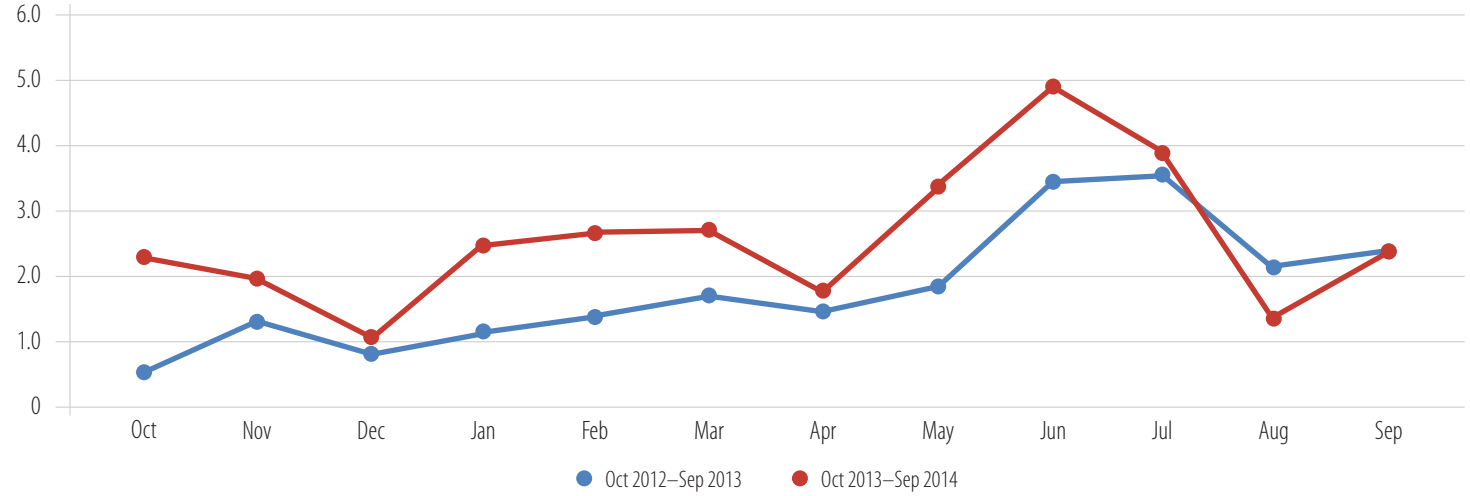
Figure 1b shows the percentage of outpatient suspected malaria cases that are confirmed to have the malaria parasite by microscopy or rapid diagnostic test kits (RDTs) per 1,000 people by the malaria epidemiological zones. Ideally, a rate of less than 1 case per 1,000 people sustained over a 12-month period indicates readiness for the elimination phase. The graphs show a marked reduction of cases in the endemic zone.

Figure 1b: Number of Outpatient Confirmed Malaria Cases per 1,000 of Population by Epidemiology Zones

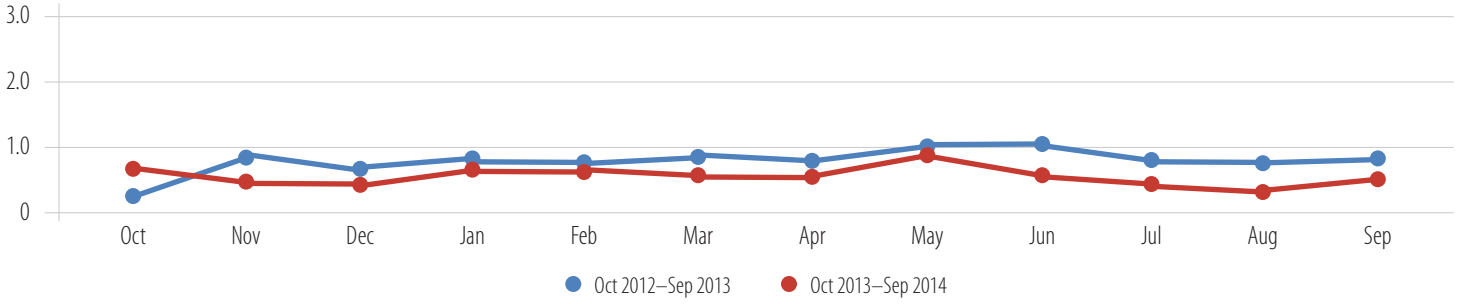
Seasonal Transmission Zone



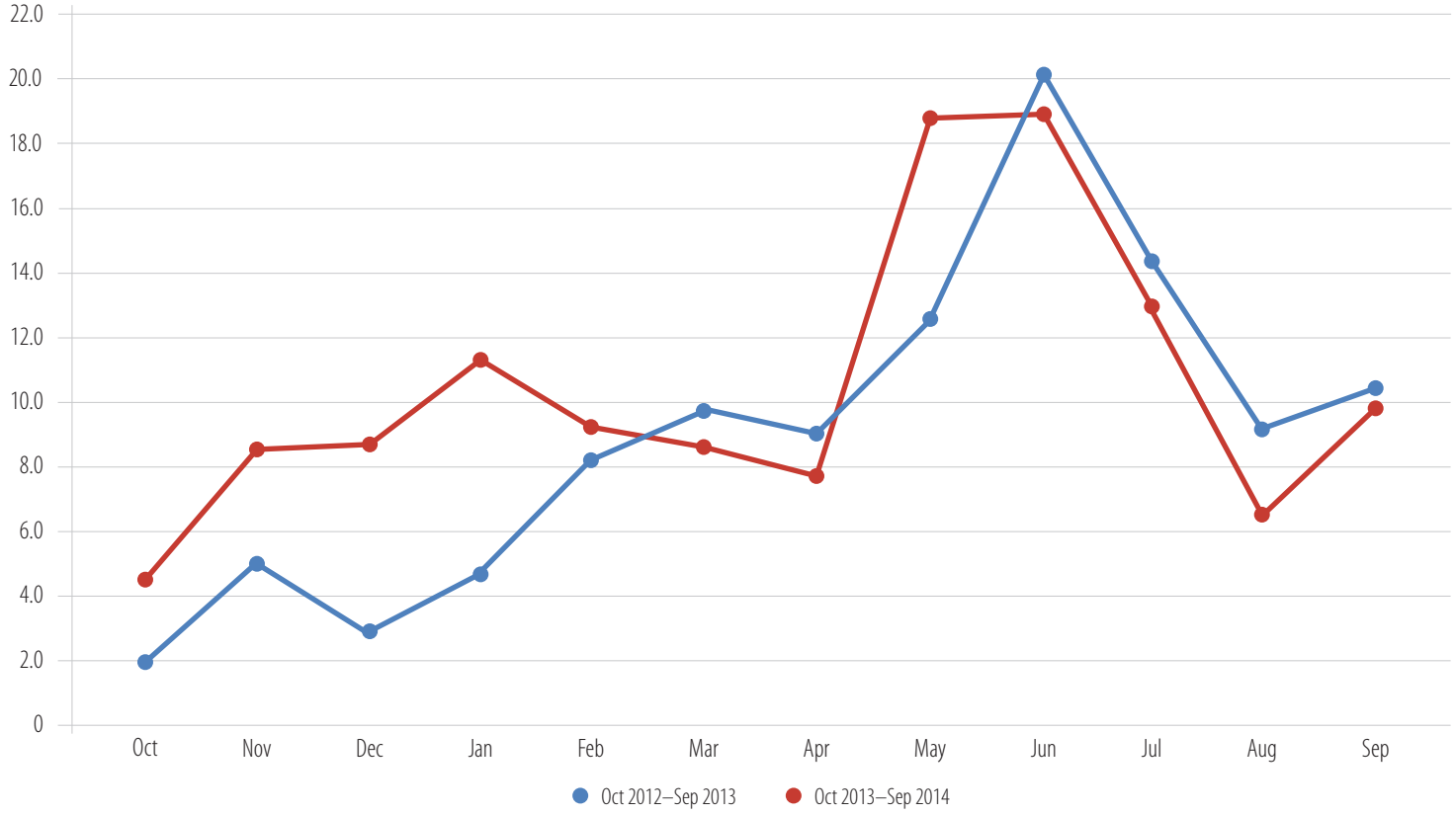
Highland Epidemic



Low Risk



Endemic Zone

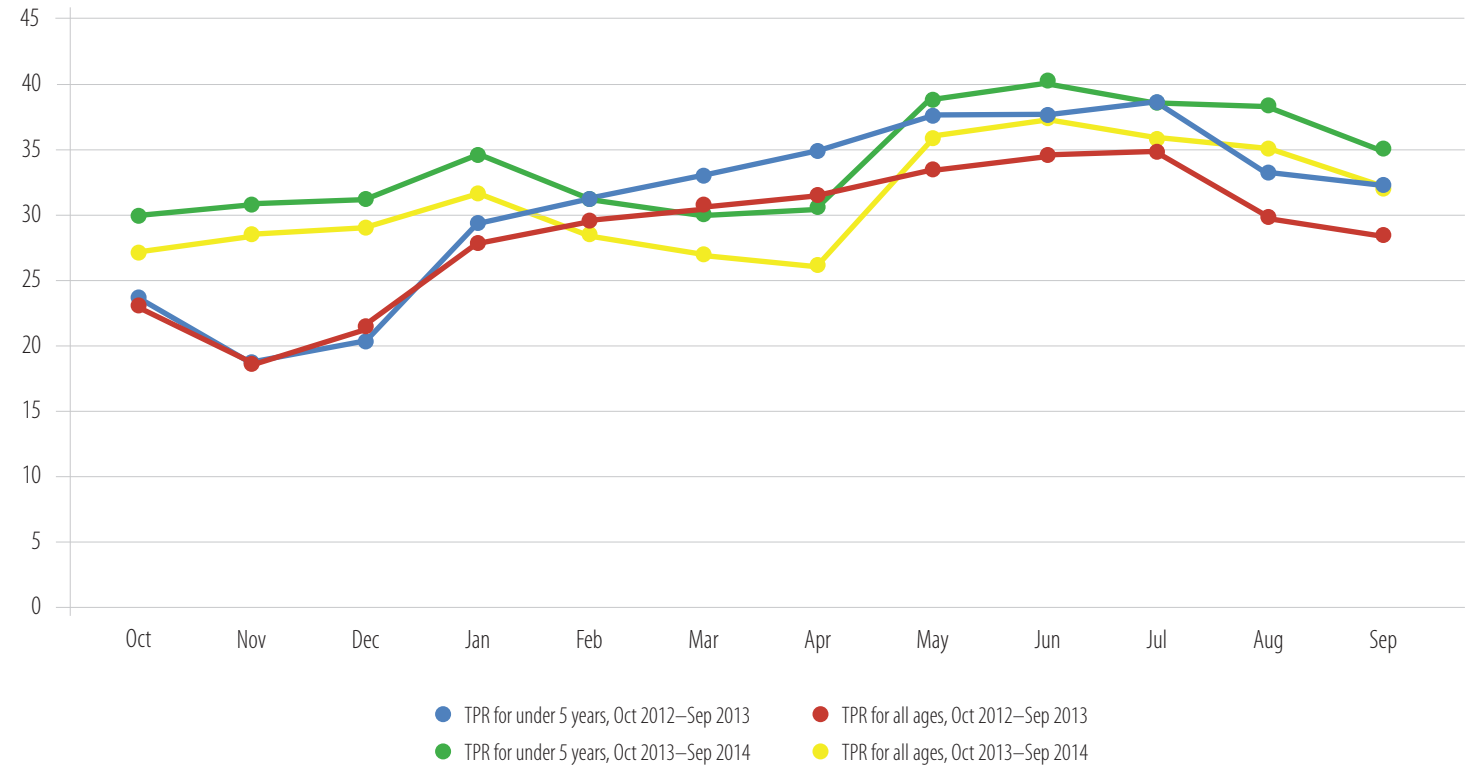


Sources: DSRU, KNBS Projection 2009 Census

OUTPATIENT TPR AMONG THE UNDER 5 YEARS AND ALL AGES

Figure 2a presents the overall outpatient TPR for the under fives and all ages in Kenya. Figure 2b shows the outpatient TPR for the under fives and all ages by the malaria epidemiological zones. The graphs are based on data from the weekly reports of 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. Note that the TPR has reduced towards the end of the quarter. The cases are slightly higher than the same period last year.

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

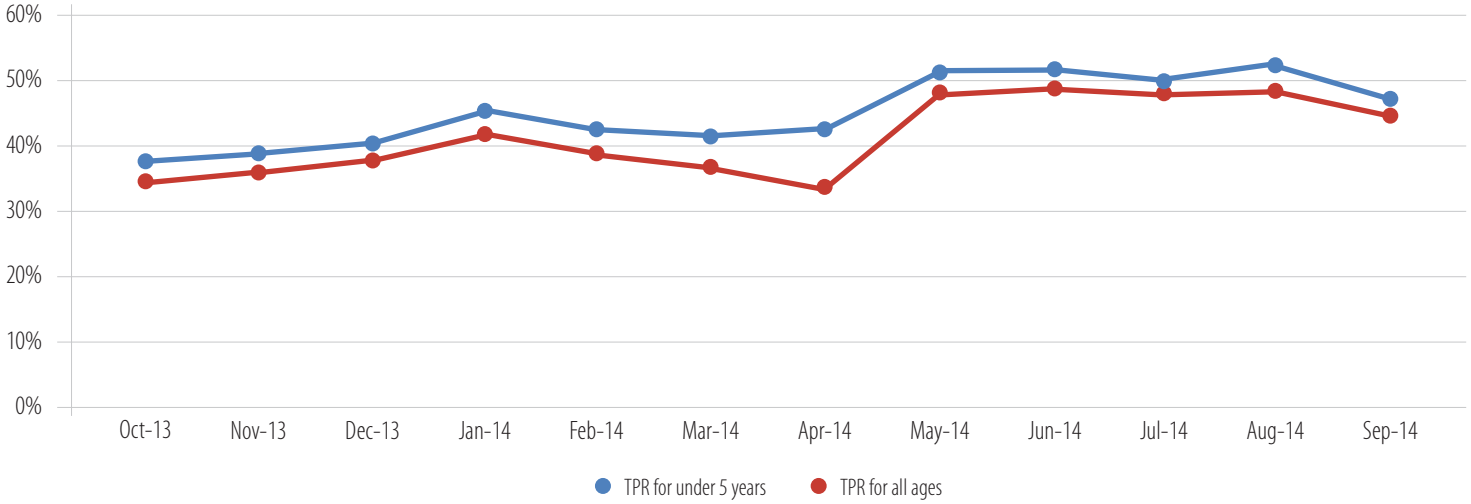


Source: DSRU

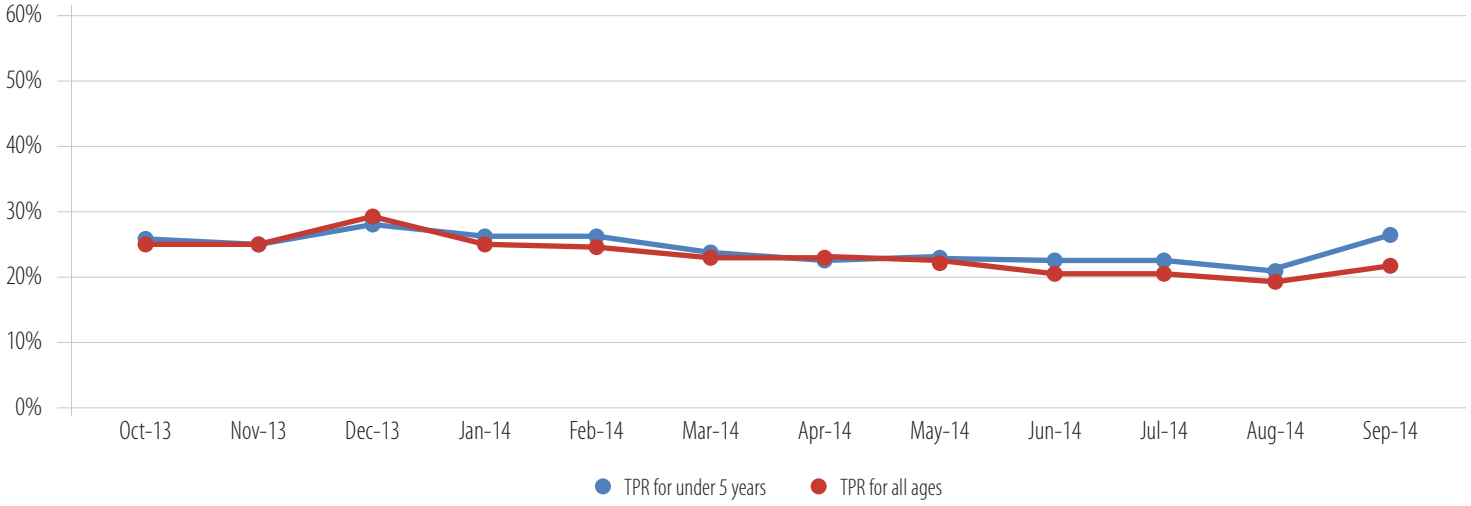
Figure 2b show outpatient TPR disaggregated by different epidemiological zones. The patterns show overall reduction of TPR across the epidemiological zones, except the TPR in the seasonal transmission zone where there was slight increase of the TPR in under 5 years towards the end of the quarter.

Figure 2b: Outpatient TPR for Under 5 Years and All Ages by Malaria Epidemiology Zones

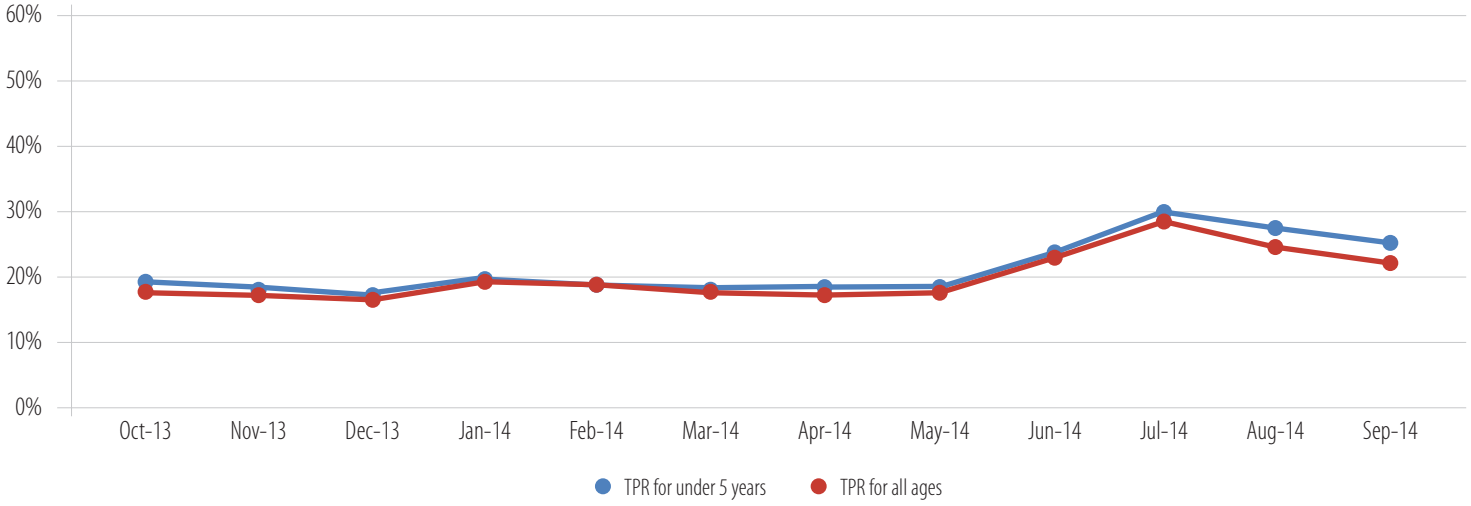
Endemic Zone



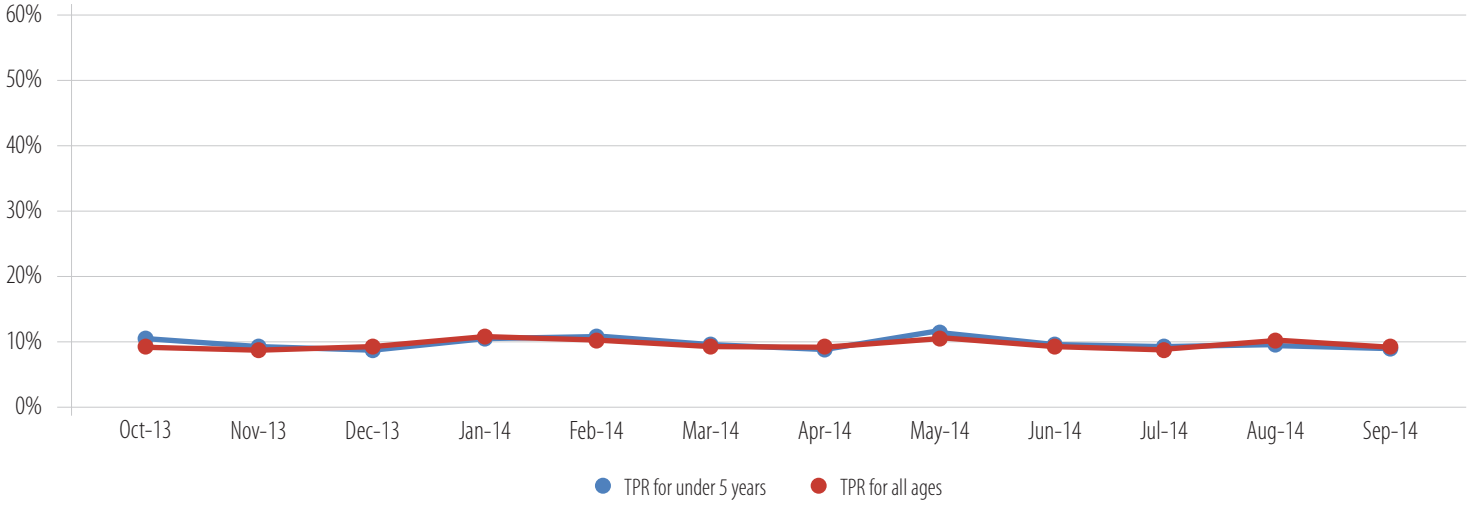
Seasonal Transmission Zone



Highland Epidemic



Low Risk

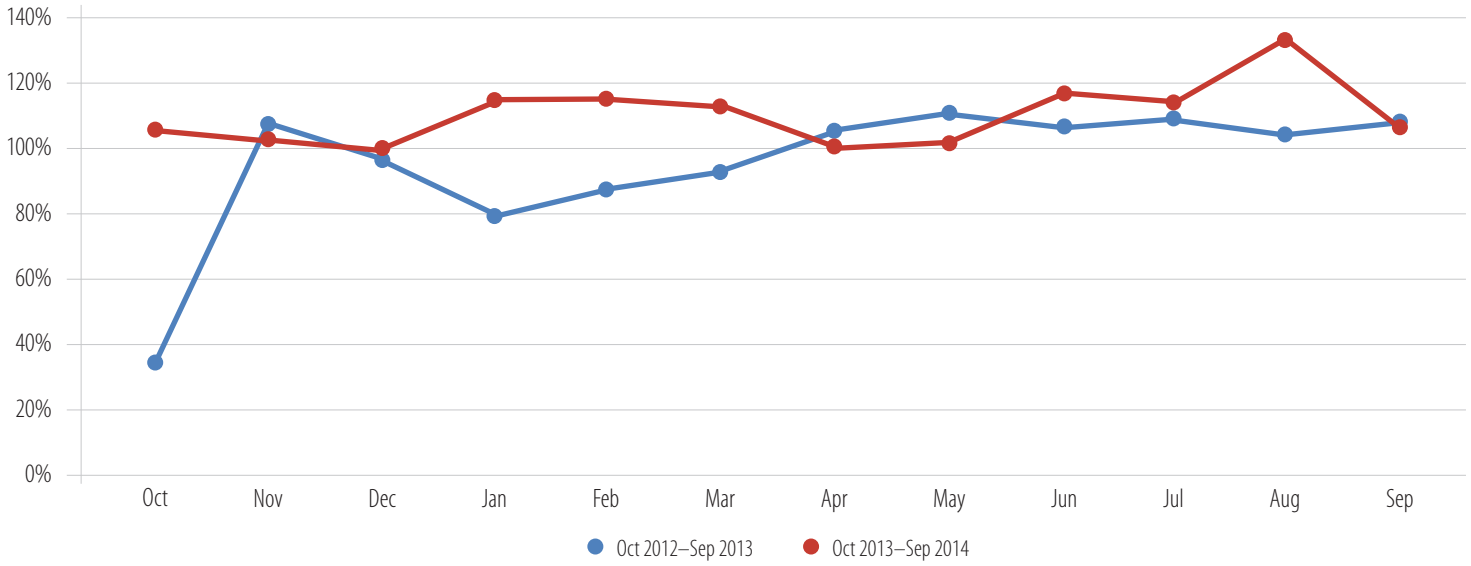


Source: DSRU

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. The testing rate (percentage of suspected malaria cases tested using a parasite-based test) has remained stable, slightly above 100%, in this quarter. However, we can't explain the more than 100% TPR Double counting of tests and patients who are referred for laboratory tests without passing the outpatient clinic could in part explain this observed anomaly (the numerator, or number of outpatient suspected malaria cases that received laboratory testing, was obtained from laboratory register while the denominator, or the number of outpatient suspected malaria cases, is from OPD register). It is noteworthy that during this time there was a distribution of RDTs to health facilities which were received in August.

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

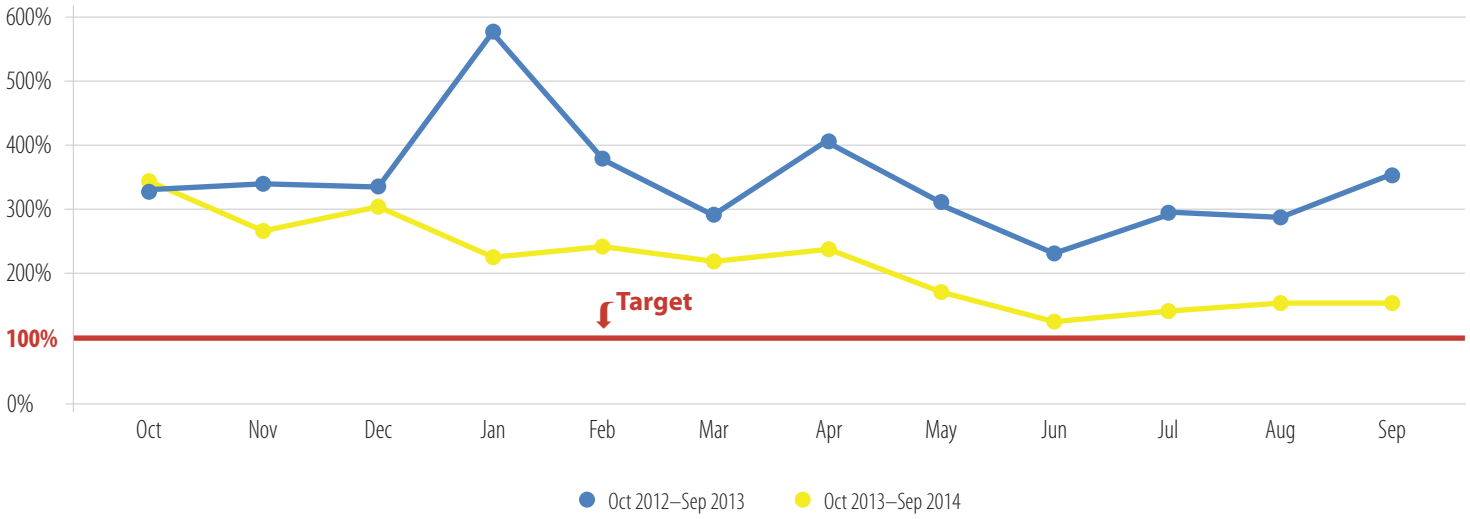


Source: DSRU

COVERAGE FOR OUTPATIENTS TREATED WITH ACT

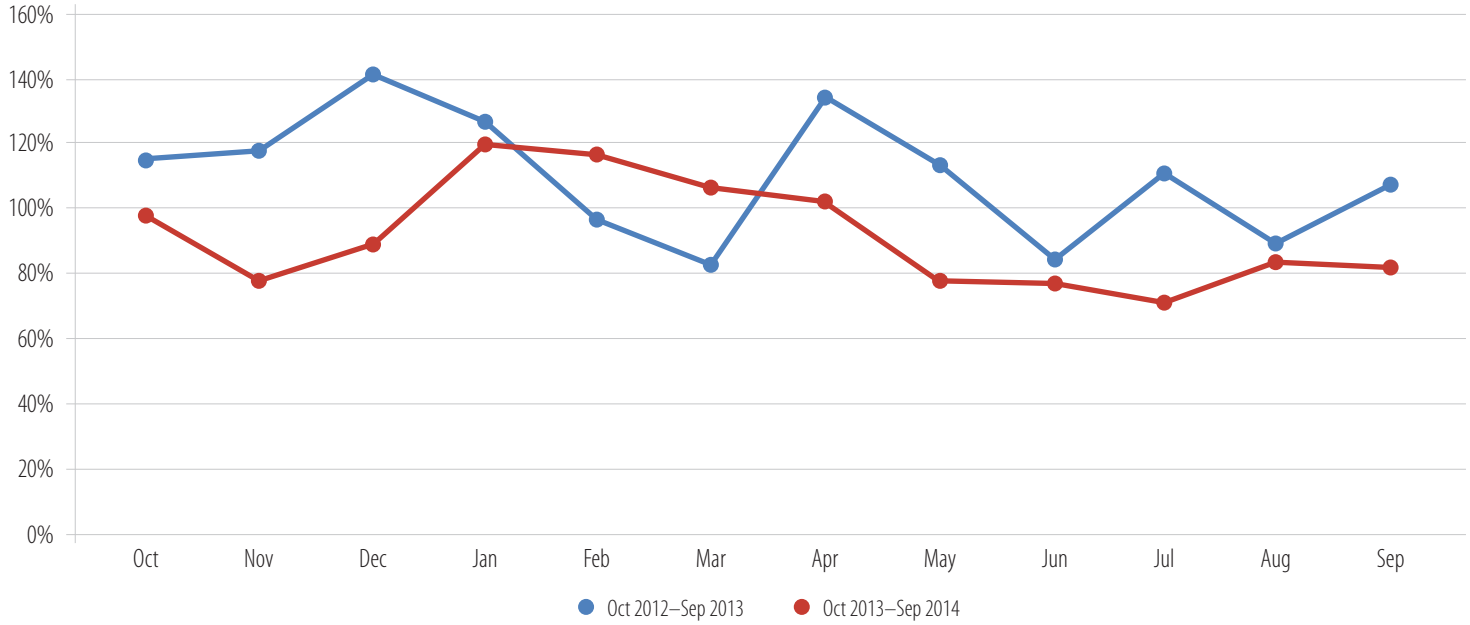
Kenya has adopted the policy of testing suspected cases of malaria before treatment. The first line anti-malarial for uncomplicated malaria should only be administered to patients who test positively for malaria parasites using a parasite laboratory test. The ability of health facilities to achieve this has been hampered in the past by low coverage of the RDTs or microscopy. Graph 4a shows the percentage of outpatient cases that were treated using artemisinin-based combination therapy (ACT) over the number of confirmed malaria cases (positive parasitological results) expected to be treated with appropriate antimalarial medicines during the reporting period. The graph shows that the proportion for the quarter is lightly above the 100% target line. This is much better than previous years when the proportion was above 300%. This could be attributed to the ongoing health worker trainings that emphasize diagnosis before treatment and potenally impact health worker clinical practice. Low stocks that were experienced during the period could also have resulted in rationing of the few stocks that were available by ensuring only positive cases were treated with ACT.

Figure 4a: Outpatient Cases Treated with ACT as a Proportion of Confirmed Malaria Cases



Source: LMIS/DHIS

Figure 4b: Outpatient Cases Treated with ACT as a Proportion of Suspected Malaria Cases

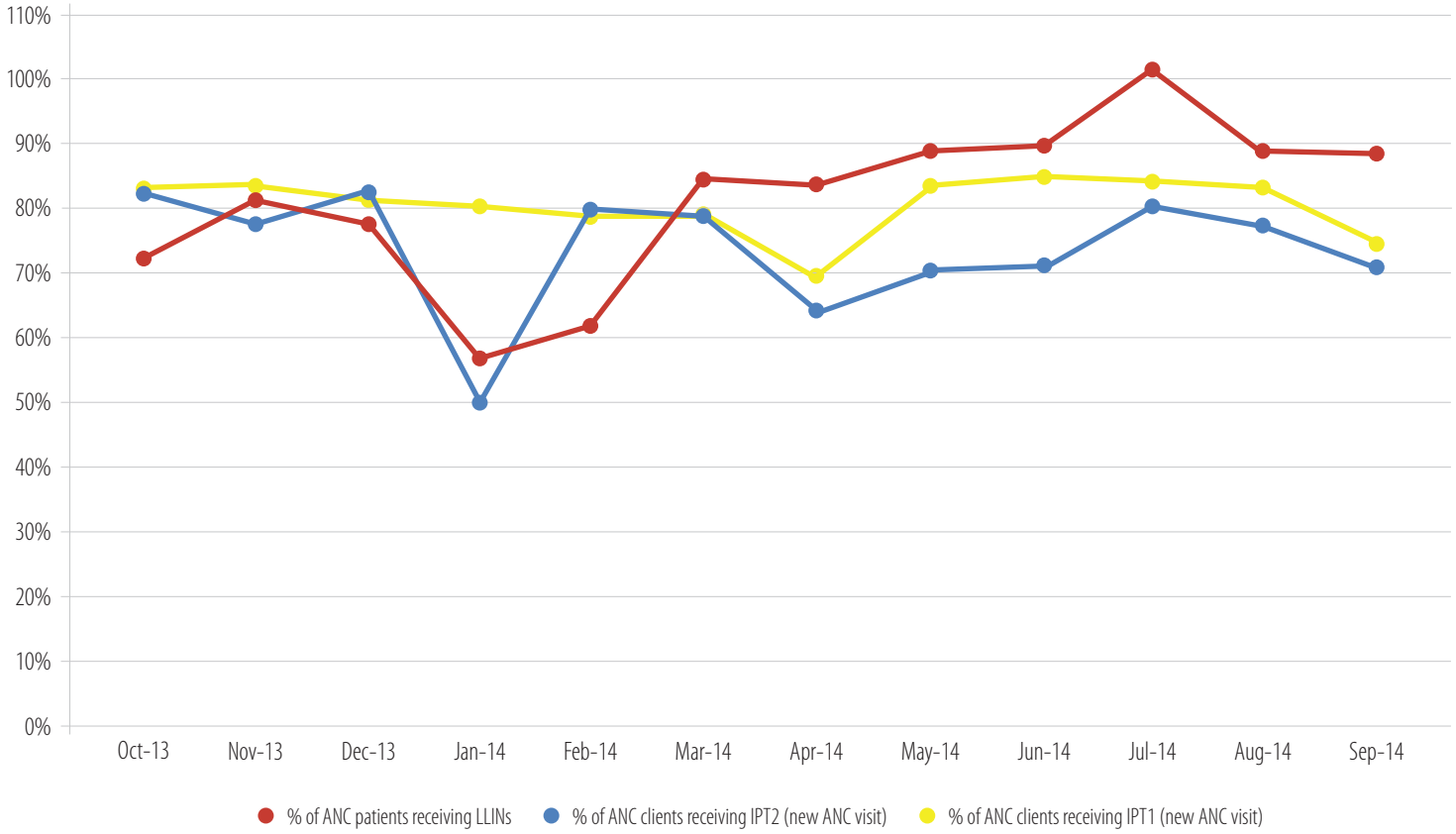


Source: LMIS/DHIS

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

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). The graphs show a reduction of both IPT1 and IPT2 during this quarter. This could be attributed to stock outs of sulphadoxine pyrimethamine at the ANC. This anti-malarial is to be procured by Counties in endemic areas and we do encourage them to use the LMIS housed in the DHIS for quantification of the amounts that are needed so as to avoid stock outs

Figure 5: Percentage of Antenatal Care Clients Receiving LLINs and IPTp2 in Endemic area

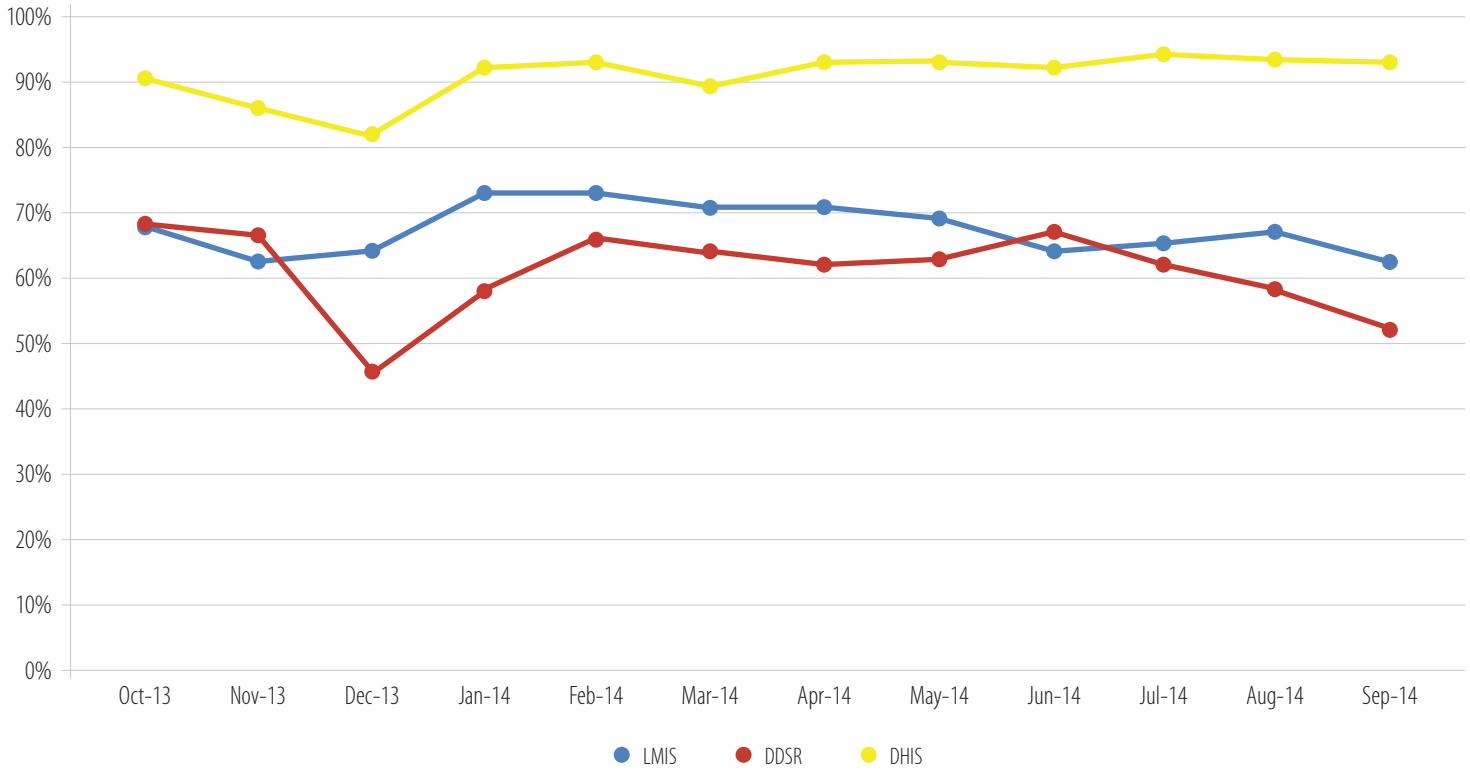


Source: DHIS

REPORTING RATES BY DATA SOURCES

MCU derives surveillance monitoring and evaluation data from various routine data reporting systems that includes DHIS, electronic-Integrated Disease Surveillance and Response (IDSR), and the Logistics Management Information System (LMIS). The reporting rates presented in Figure 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. Of note is the decreasing reporting rate for the e-IDSR which is attributable to the challenges in the web-based system and the increase in the number of facilities. The DSRU is looking into web-based system to mitigate. Counties are advised to submit a list of functional facilities to the DSRU.

Figure 6: Reporting Rates



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 4 of 2013–2014. Those with stars have either overtreated or undertreated out patients. We do emphasize that patients are to tested before being treated wherever there is diagnotic capability. The difference in the number of outpatient confirmed malaria cases and the aggregated patients on ACT 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	# out-patient suspected malaria cases	# out-patient confirmed malaria cases	Aggregated patients on ACT	# outpatient cases treated with ACT as a proportion of confirmed malaria cases	# outpatient cases treated with ACT as a proportion of suspected malaria cases	Reporting rates (%) of the malaria commodity form
Western	Bungoma*	460,246	318,753	570,926	179	124	97.2
	Busia*	415,453	233,348	384,485	165	93	93.3
	Kakamega*	289,545	135,274	348,603	258	120	96
	Vihiga*	884,937	365,037	641,164	176	72	100
Nyanza	Homa Bay*	599,912	282,401	685,327	243	114	98.5
	Kisii *	370,643	92,830	277,045	298	75	98.4
	Kisumu*	415,875	223,092	449,899	202	108	96.1
	Migori*	632,065	333,566	711,909	213	113	97.2
	Nyamira*	91,844	18,305	86,931	475	95	99.2
	Siaya*	595,505	358,031	655,318	183	110	96.9
Rift Valley	Baringo*	112,396	20,589	104,149	506	93	90.9
	Bomet*	88,066	5,071	73,475	1449	83	95.6
	Elgeyo/Marakwet*	36,047	9,473	13,759	145	38	96.6
	Kajiado*	57,346	17,589	50,020	284	87	82.1
	Kericho*	156,318	24,352	93,532	384	60	97
	Laikipia*	20,721	5,564	33,910	609	164	93.7
	Nakuru*	166,162	64,152	79,848	124	48	95
	Nandi*	216,712	48,692	125,363	257	58	92.5
	Narok*	92,081	22,467	39,890	178	43	81.6
	Samburu*	9,067	7,096	14,401	203	159	80.4
	Trans Nzoia*	165,268	90,357	66,291	73	40	95
	Turkana*	150,627	82,163	267,188	325	177	86.9
	UasinGishu*	162,741	49,662	120,757	243	74	86.9
	West Pokot	165,132	59,128	70,130	119	42	95.2
Coast	Kilifi*	136,976	83,594	203,510	243	149	97.2
	Kwale*	182,418	109,325	136,363	125	75	83.5
	Lamu	3,413	2,152	328	15	10	79.1
	Mombasa*	120,427	55,863	16,657	30	14	93.5
	TaitaTaveta*	26,393	7,683	27,050	352	102	96.5
	Tana River*	17,933	8,733	5,790	66	32	84.8
Eastern	Embu	57,407	31,906	47,837	150	83	95.6
	Isiolo	24,279	11,027	17,390	158	72	85.5
	Kitui*	142,063	52,958	99,667	188	70	95.9
	Machakos*	49,844	9,537	32,740	343	66	97.5
	Makueni*	90,486	10,721	82,928	774	92	99.7

Region	County	# out-patient suspected malaria cases	# out-patient confirmed malaria cases	Aggregated patients on ACT	# outpatient cases treated with ACT as a proportion of confirmed malaria cases	# outpatient cases treated with ACT as a proportion of suspected malaria cases	Reporting rates (%) of the malaria commodity form
Eastern *con't*	Marsabit *	15,160	3,546	51,322	1447	339	94
	Meru*	292,563	164,388	90,864	55	31	97
	Tharaka-Nithi	124,616	45,403	49,922	110	40	95.1
North Eastern	Garissa*	15,696	8,591	8,329	97	53	91.9
	Mandera*	21,290	4,532	12,979	286	61	75.8
	Wajir	10,709	8,023	8,551	107	80	82.2
Central	Kiambu*	24,322	9,253	7,300	79	30	97.8
	Kirinyaga*	20,215	1,084	4,308	397	21	100
	Murang'a*	6,792	643	3,492	543	51	96.7
	Nyandarua*	8,335	3,570	9,281	260	111	98.1
	Nyeri*	581	304	186	61	32	96.9
Nairobi	Nairobi*	82,348	46,881	62,228	133	76	76.3
	Total	*1,320,496*	*1,388,036*	*389,152*	*1,133,908*	*105*	*140,298*

Source: DHIS

**Counties that are not adhering to malaria treatment guidelines.*

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

Table 2: Reported Malaria Cases by Epidemiological Zones

Zones	Quarter	Under 5 Years				All Ages			
		Total # cases	Total # tested	Total # positive	TPR	Total # cases	Total # tested	Total # positive	TPR
Endemic	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	391,639	316,392	136,519	43	1,096,294	895,943	352,747	39
	Qtr4 13/14	434,746	410,366	202,516	49	1,221,346	1,218,544	549,188	45
	Qtr1 14/15	240,212	252,084	124,465	49	725,643	756,474	353,968	47
Seasonal Transmission	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	84,014	92,022	23,511	26	260,618	303,710	73,717	24
	Qtr4 13/14	77,014	87,693	19,913	23	253,966	297,771	65,019	22
	Qtr1 14/15	43,427	54,563	13,027	24	143,011	190,548	39,792	21
Highland Epidemic	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	121,608	110,694	20,890	19	380,076	350,543	65,393	19
	Qtr4 13/14	108,988	111,595	27,740	25	360,578	354,549	83,130	23
	Qtr1 14/15	75,506	75,967	21,017	28	236,494	246,750	62,604	25
Low Risk Malaria Areas	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	30,342	72,815	7,622	10	86,205	228,897	23,630	10
	Qtr4 13/14	29,937	77,380	7,846	10	97,188	254,307	25,794	10
	Qtr1 14/15	17,242	46,514	4,415	9	55,544	151,601	14,574	10