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UGANDA MALARIA SURVEILLANCE PROJECTMulago Hospital Complex, P.O.Box 7475, Kampala, Tel. 041-530692, Fax 041-540524;
website umsp.muucsf.org**UMSP out-patient sentinel site malaria surveillance report April 2012****Introduction**

Uganda Malaria Surveillance Project (UMSP) manages 6 out-patient sentinel sites located around the country with varying malaria transmission intensity. Based on historical entomological and epidemiological data, these sites include two with relatively low transmission intensity (Kamwezi and Kihihi), two sites with medium transmission intensity (Walukuba and Kasambya) and two sites with high transmission intensity (Nagongera and Aduku).

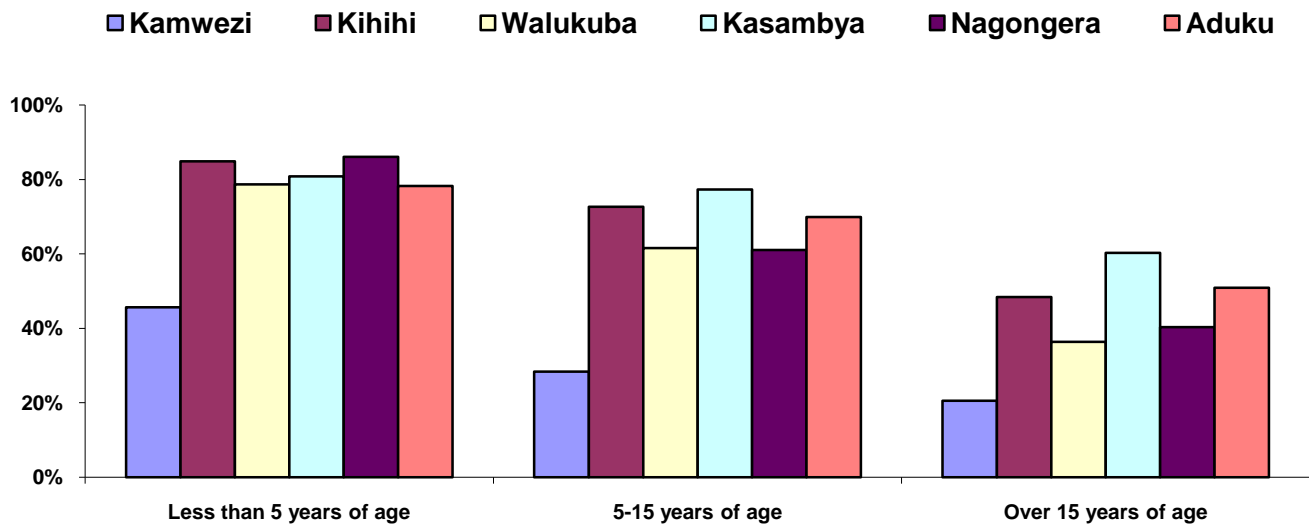
The sentinel sites collect high quality malaria data, which is analyzed to produce monthly reports. These monthly reports aim to give an overview of the malaria situation in the different parts of the country where the sentinel sites are located. UMSP also maintains a website umsp.muucsf.org that can be accessed for more information.

Data summary

District	Site	Total number of patients seen		Malaria suspected		Patients sent to the laboratory		Laboratory confirmed malaria	
		Total	< 5 years	Total	< 5 years	Total	< 5 years	Total	< 5 years
Kabale	Kamwezi	1,463	311	402	142	398	141	40	8
Kanungu	Kihihi	1,363	271	830	230	830	230	227	58
Jinja	Walukuba	3,029	591	1,492	465	1,488	465	213	48
Mubende	Kasambya	1,106	250	755	202	737	199	161	55
Tororo	Nagongera	1,550	468	884	403	847	395	256	182
Apac	Aduku	1,283	235	749	184	747	184	94	25

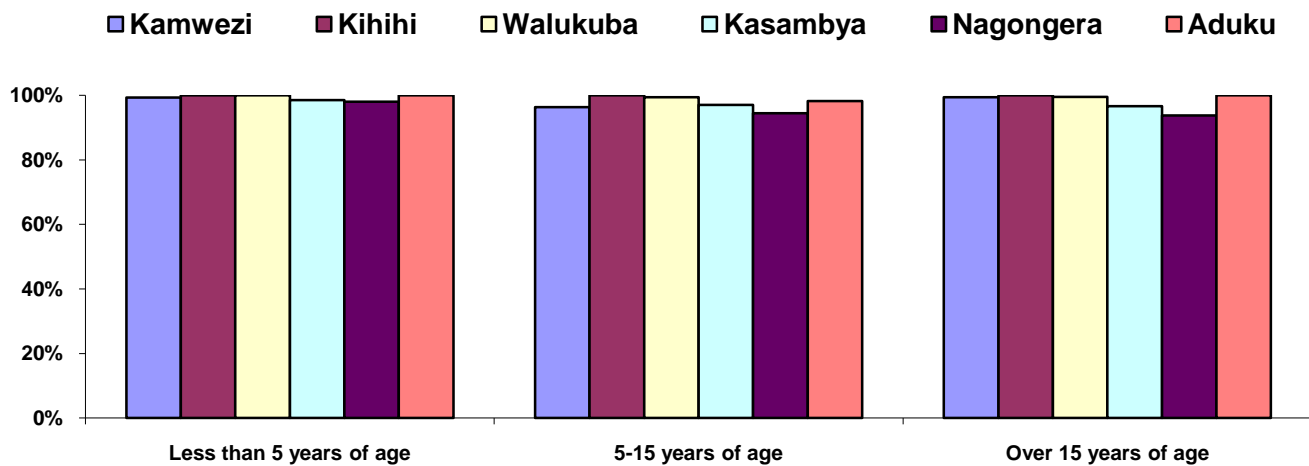
The total OPD clinic attendance ranged from 1106 (Kasambya) to 3029 (Walukuba), of which 20% to 30% were children under 5 years. The proportion of patients suspected to have malaria was lowest at Kamwezi (27%) and highest at Kasambya (68%). Over 95% of these were referred for a confirmatory laboratory test and those testing positive for malaria ranged from 10% (Kamwezi) to 30% (Nagongera).

Proportion of total patients seen suspected of having malaria



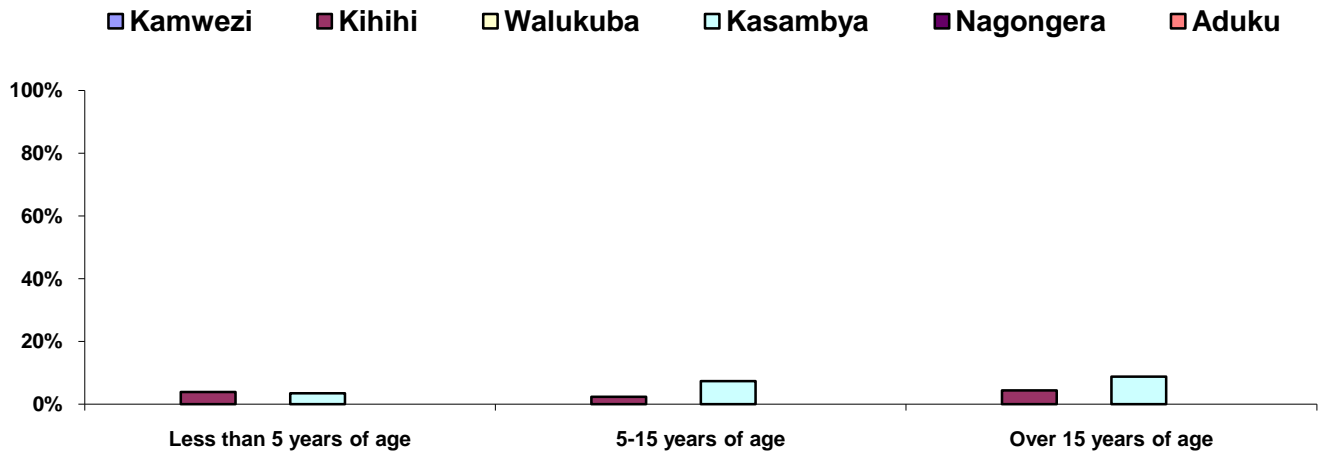
As seen in the previous monthly reports, the proportion of cases suspected to have malaria decreased with increasing age at all sites. Overall, the highest proportions were in Kihihi, among the under 5s, and Kasambya for the other two age-groups while Kamwezi recorded the lowest for each age group.

Proportion of patients with suspected malaria for whom a lab test was done



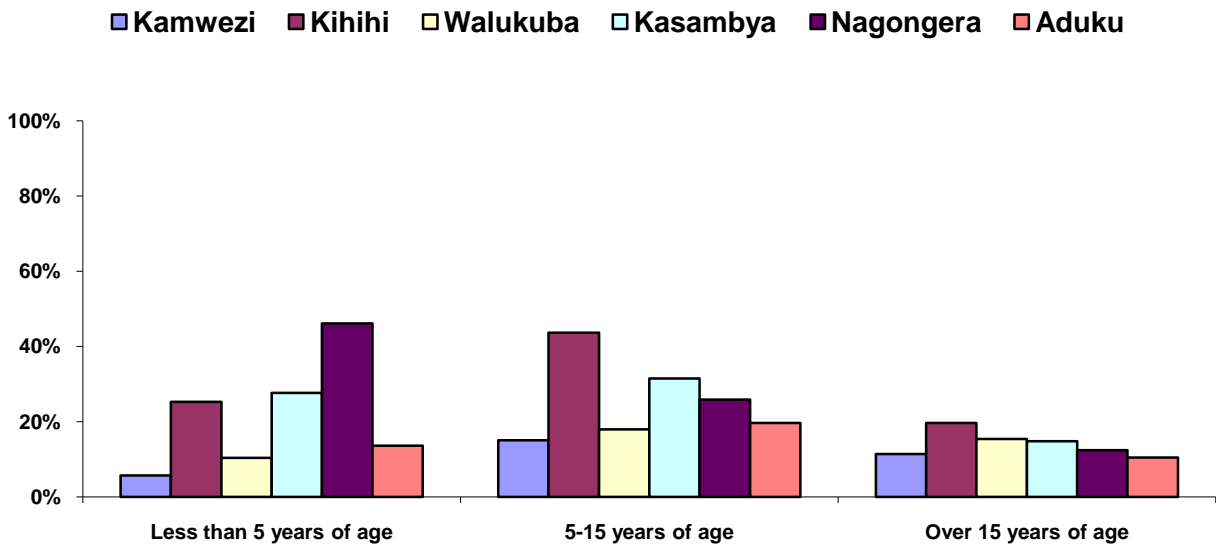
Over 95% of all participants suspected of having malaria were sent to the laboratory for a confirmatory test.

Proportion of laboratory tests done that were RDTs



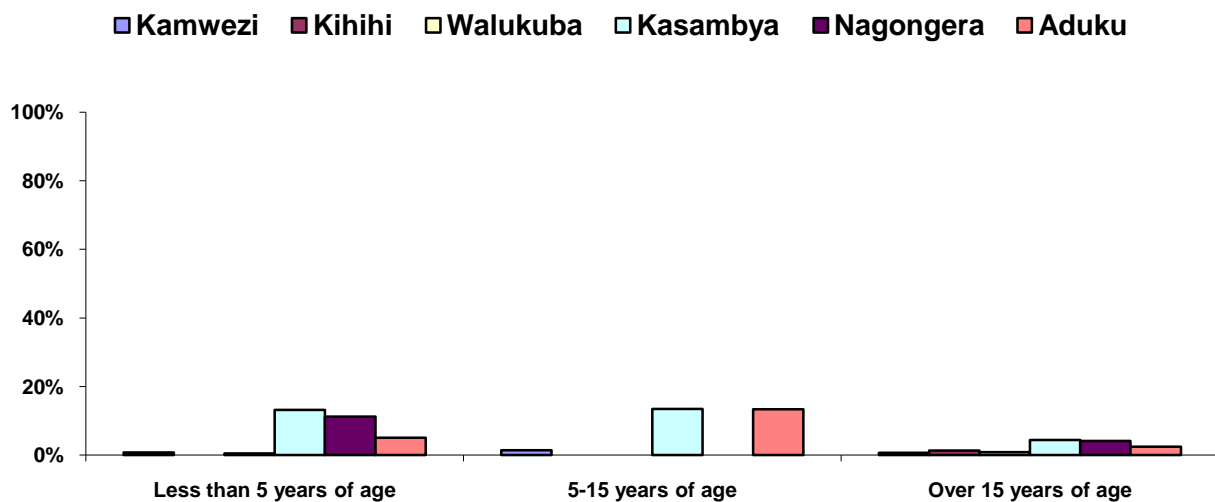
RDTs were done in two of the six sites (Kasambya and Kihihi) and these were below 10% of laboratory tests done.

Proportion of laboratory tests done that were positive



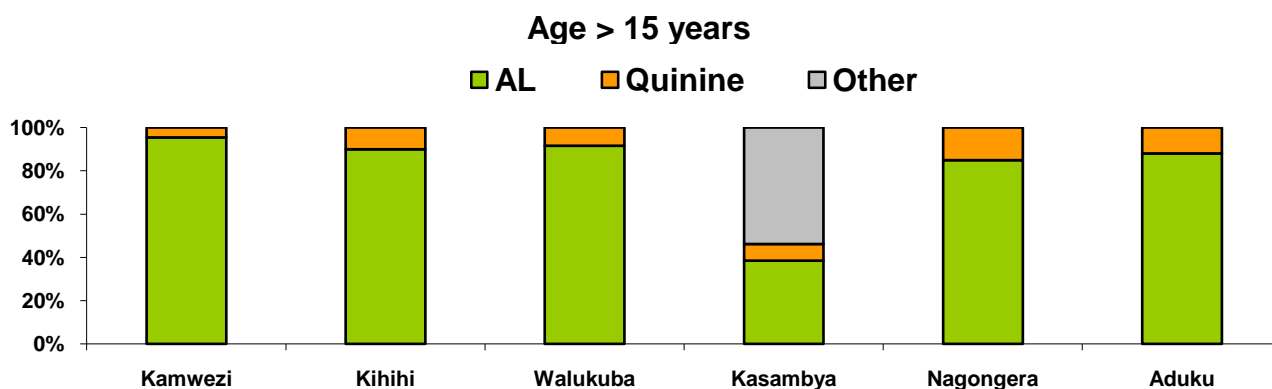
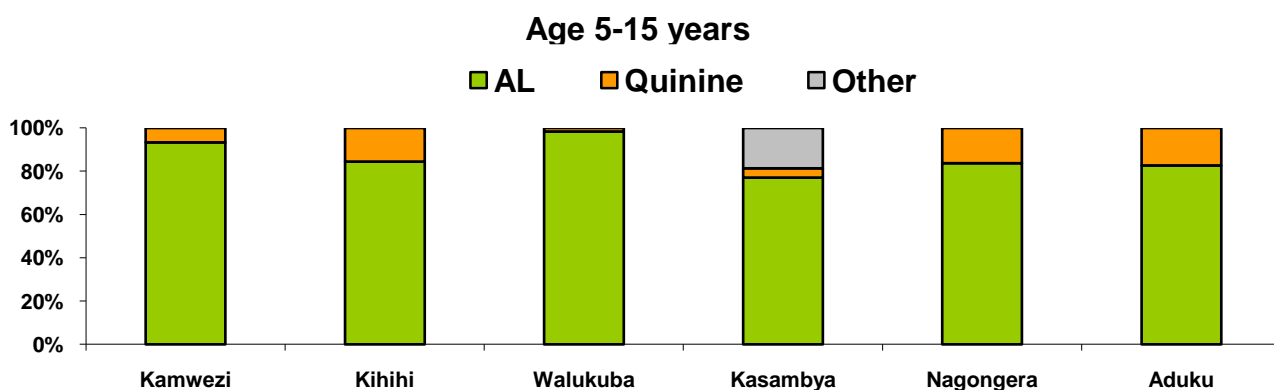
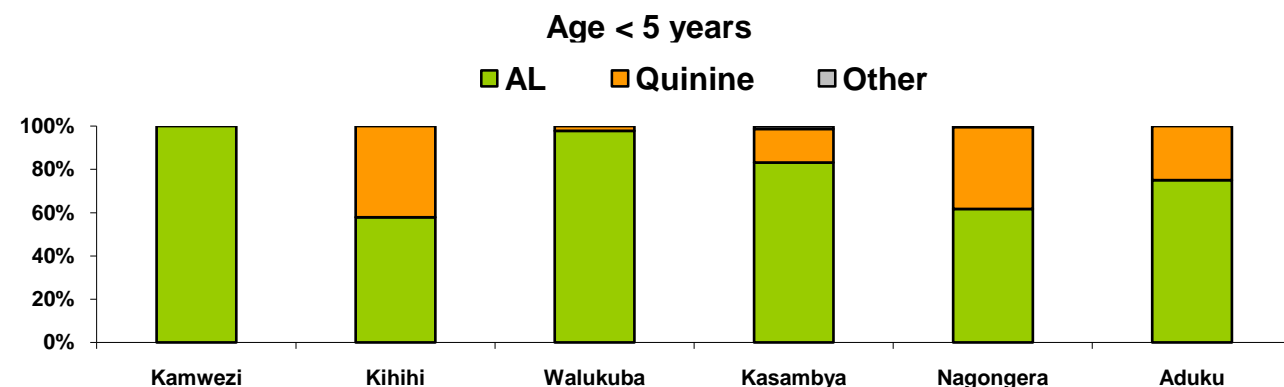
The test positivity rate (TPR) ranged from 5% (Kamwezi) to 46% (Nagongera) among the children < 5 , from 15% (Kamwezi) to 44% (Kihihi) among the 5 – 15 years and from 10% (Aduku) to 19%(Kihihi) among the over 15 years. When compared to the previous month, TPR at Aduku has decreased from 39% (Mar 12) to 14% (Apr 12) among the under 5s, from 60% (Mar 12) to 20% (Apr 12) among the 5 – 15 years and from 45% (Mar 12) to 10% (Apr 12) among the over 15 years, but has remained relatively stable at the other sites.

Proportion of patients with a negative lab test result who were prescribed antimalarials



The practice of prescribing an anti-malarial to patients with a negative lab result was highest in Kasambya (13%) among the under 5 years of age.

Antimalarial drug treatment practices among those prescribed antimalarials



Artemether-lumefantrine (AL) was still the predominant antimalarial prescribed with the exception of the over 15 years age group in Kasambya. Quinine is still the second most prescribed antimalarial at all sites especially in Kihihi where up to 42% of children under 5 received it. The other antimalarials prescribed included arco (artemesinin-napthoquine) and artemether injection in Kasambya mostly among the over 15 years. All sites reported availability of all AL colored pre-packs throughout the month except Nagongera that reported shortage of yellow, blue and brown pre-packs and Kamwezi reporting a shortage in the green pre-packs.

Laboratory Quality Control (QC) results

UMSP is currently validating accuracy of individual microscopist's (WHO: Any persons reading blood smears for malaria parasites) in reading blood smears for malaria parasites at all sentinel sites. Prior to starting the exercise, the site laboratories were switched from using Field stain to Giemsa stain, the recommended gold standard technique for malaria microscopy. Microscopists at all sites were first trained on the Giemsa staining technique, mounting slides with cover slips labeling of slides and slide storage of all the slides read in the month.

For each microscopist, 50 slides were randomly sampled from slides collected over a period of one month and re-read by expert microscopist's based at the UMSP central laboratory. If a microscopist read less than 50 slides in a month, all slides were re-read. Both the first (site microscopist) and second (expert microscopist) reader results were double entered and compared. Sensitivity and specificity results were considered when assessing performance of microscopists and sites. Microscopist's with sensitivity and/or specificity scores < 85% were contacted and re-trained. More results will follow subsequently as they are processed.

Health Centre	Jan 12					Feb 12				
	Number of slides		Results			Number of slides		Results		
	Positive	Negative	Sensitivity	Specificity	% Agreement	Positive	Negative	Sensitivity	Specificity	% Agreement
Nagongera	NA	NA	NA	NA	NA	104	196	88%	97%	94%
Walukuba	37	187	86%	97%	95%	29	246	64%	97%	91%
Kihihi	41	60	90%	88%	89%	27	106	96%	93%	94%

In January, 8 microscopists from 2 sites were assessed; Walukuba (5) and Kihhi (3). All microscopists from Walukuba performed well. In Kihhi, two microscopists performed well, but one had specificity score (82%) that was below the acceptable cut off and therefore needed re-training. In February, 14 microscopists were assessed; Nagongera (5), Walukuba (6) and Kihhi (3). All microscopists in Nagongera performed well. In Kihhi a marked improvement in performance was noted. A decline in performance was noted in Jinja with 5 microscopists performing poorly (sensitivity <85%). Despite low sensitivity scores, the level of percentage agreement was high (>90%) for all the 5 microscopists. The UMSP lab team together with the District Lab Focal Person visited Walukuba lab to address possible reasons for the observed decline.

Appendix: Definitions

Indicator	Definition	
Proportion of total patients seen suspected of having malaria	Numerator:	Number of patients referred to the lab or given a clinical diagnosis of malaria
	Denominator:	Total number of patients seen
Proportion of patients with suspected malaria for whom a lab test was done	Numerator:	Number of laboratory tests performed
	Denominator:	Total number of patients with suspected malaria
Proportion of laboratory tests done that were RDTs	Numerator:	Number of lab tests performed that were RDTs
	Denominator:	Total number of laboratory tests performed
Proportion of laboratory tests done that were positive	Numerator:	Number of laboratory tests that were positive
	Denominator:	Total laboratory tests performed
Proportion of patients with negative lab test result who were prescribed antimalarials	Numerator:	Number of patient with a negative lab test result and were prescribed antimalarials
	Denominator:	Total number of patient with a negative lab test result