Kenya

2020 Malaria Indicator Survey

Summary Report

REPUBLIC OF KENYA

MINISTRY OF HEALTH

The 2020 Kenya Malaria Indicator Survey (2020 KMIS) was implemented by the Ministry of Health (MOH) Division of National Malaria Programme (DNMP) and the Kenya National Bureau of Statistics (KNBS). Financial support for the survey was provided by the United States Agency for International Development (USAID) through the President's Malaria Initiative (PMI) and by the Government of Kenya with Global Fund support. ICF provided technical assistance through The DHS Program, a USAID-funded project offering support and technical assistance in the implementation of population and health surveys in countries worldwide.

Additional information about the 2020 KMIS may be obtained from the Division of National Malaria Programme of the Ministry of Health, 19982 - 00202, Kenyatta National Hospital, Nairobi, Kenya; e-mail: info@nmcp.or.ke; website: www.nmcp.or.ke.

Information about The DHS Program may be obtained from ICF, 530 Gaither Road, Suite 500, Rockville, MD 20850, USA; telephone: +1-301-407-6500; fax: +1-301-407-6501; email: info@DHSprogram.com; website: www.DHSprogram.com.

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MINISTRY OF HEALTH, KENYA

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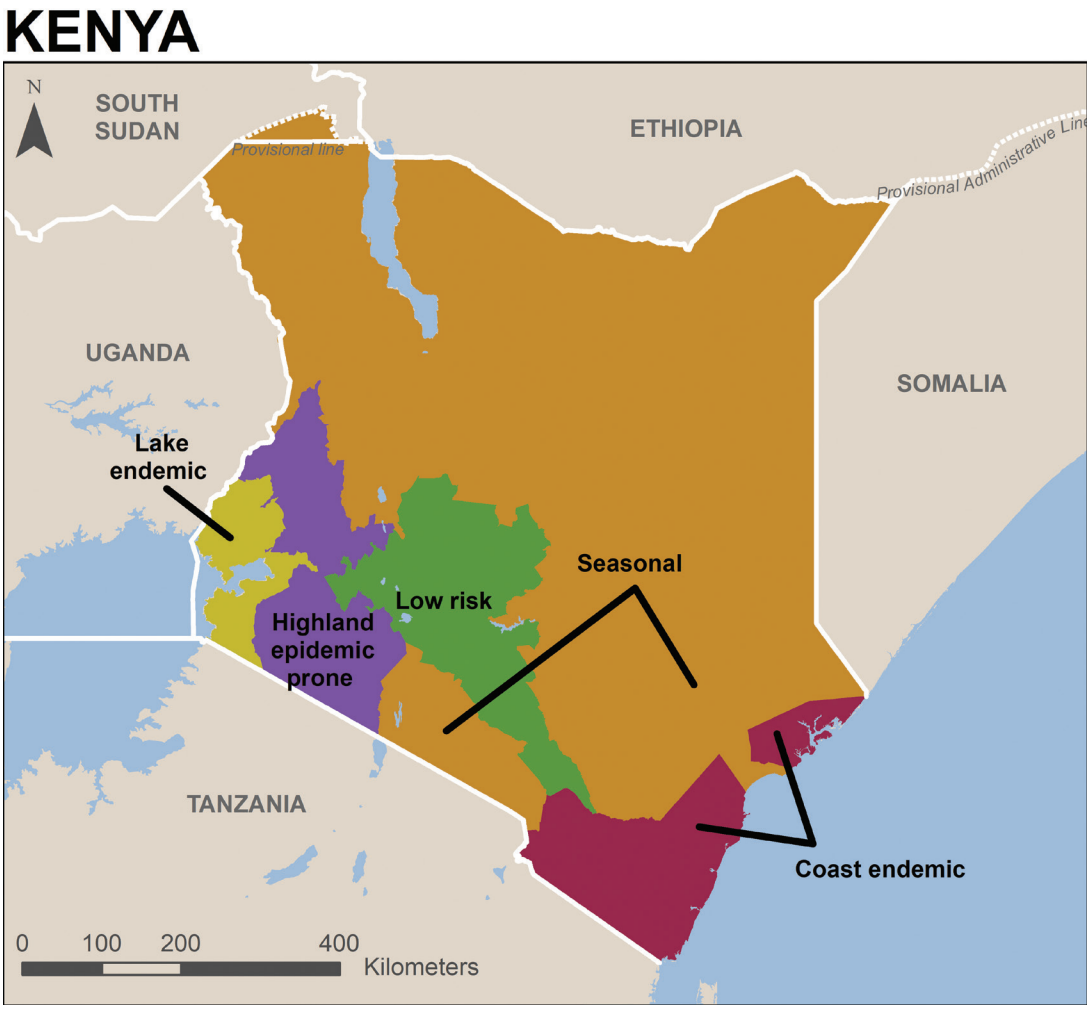
About the 2020 KMIS

The 2020 Kenya Malaria Indicator Survey (KMIS) is designed to provide data on the implementation of core malaria control interventions and as a follow-up to previous MIS surveys. The 2020 KMIS is the fourth MIS survey conducted in Kenya since 2007. The objective of the survey is to provide reliable estimates that can be used by programme managers and policymakers to evaluate and improve existing programs including mosquito net ownership, access, and use; coverage of intermittent preventive treatment of malaria in pregnancy; case management of fever and malaria in children; knowledge, attitudes and practices regarding malaria control; and the prevalence of *Plasmodium* species most prevalent in Kenya.

The 2020 KMIS fieldwork was originally planned from June to July 2020. However, by June 2020, COVID-19 had prompted a nationwide curfew and a cessation of movement in certain areas of the country. The survey's stakeholders agreed on an adjusted plan, to hold fieldwork in October-December 2020, which coincided with the short rains, and to pivot to a virtual technical assistance model for training and survey oversight. Survey logistics were recalibrated to include COVID-19 risk mitigation elements.

Who participated in the survey?

A nationally representative sample of 6,771 women in 7,952 households were interviewed. This represents a response rate of 96% of women and 97% of households. The sample design for the 2020 KMIS provides estimates at the national level, for urban and rural areas, and for 5 malaria endemicity zones — Highland epidemic prone, Lake endemic, Coast endemic, Seasonal, and Low risk.



Characteristics of Households and Respondents

Household Composition

The average household size in Kenya is 3.7 members. Nearly 1 in 3 households are headed by women (31%). Thirty-nine percent of the Kenyan population is under age 15.

Water, Sanitation, and Electricity

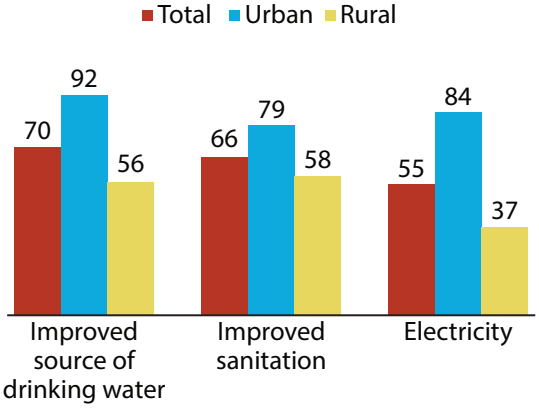
Seven in ten Kenyan households have access to an improved source of drinking water. Ninety-two percent of urban households and 56% of rural households have access to an improved source of drinking water.

Two-thirds of households in Kenya use an improved sanitation facility, including facilities shared with other households. Urban households are more likely than rural households to use improved sanitation facilities (79% versus 58%). Twenty-eight percent of households use unimproved sanitation, while 6% of households have no sanitation facility or openly defecate.

More than half of Kenyan households have electricity (55%). The majority of urban households have electricity (84%), compared to 37% of rural households.

Water, Sanitation, and Electricity by Residence

Percent of households with:



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Ownership of Goods

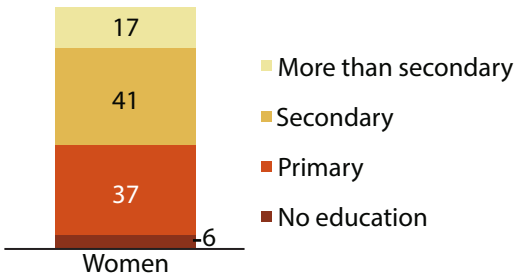
Most Kenyan households have a mobile phone (90%), 72% have a radio, and 49% have a television. More than half of Kenyan households own agricultural land (52%) or farm animals (56%). Urban households are more likely than rural households to own a mobile telephone, radio, or television. In contrast, rural households are more likely to own agricultural land or farm animals than urban households.

Education

Six percent of women age 15-49 in Kenya have no education. More than one-third of women (37%) have attended primary school, while 41% have attended secondary school. Only 17% of women have more than secondary education. Nearly 9 in 10 women (89%) are literate. More women in urban areas are literate, compared to rural women (95% versus 85%, respectively).

Education among Women

Percent distribution of women age 15-49 by highest level of education attended



Malaria Prevention

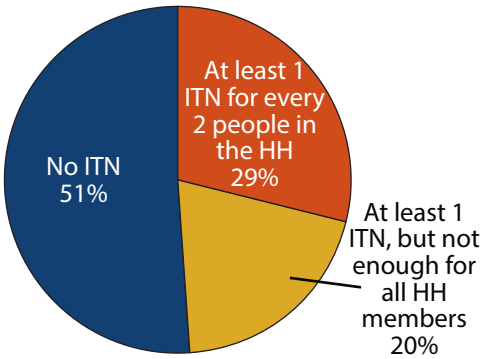
Insecticide-treated Nets (ITNs)

Among households in Kenya, 49% own at least one insecticide-treated net or ITN. An ITN is a factory-treated net that does not require any further treatment. ITN ownership has declined since 2015 when 63% of households owned at least one ITN.

Only 29% of households have enough ITNs to cover each household member, assuming one ITN is used by two people. One in five households have at least one ITN but not enough for all household members, while half of households do not have an ITN.

Household Ownership of Insecticide-treated Nets (ITNs)

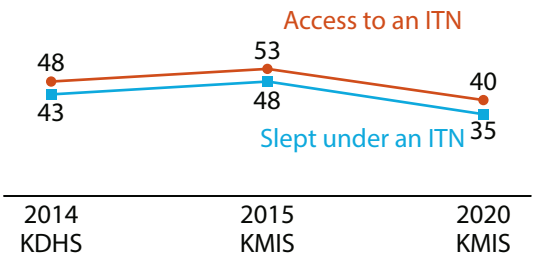
Percent distribution of households (HH)



Access to an ITN is a calculation of the proportion of the population that could sleep under an ITN if each ITN in the household were used by up to two people. Forty percent of the household population in Kenya has access to an ITN, and 35% of the population slept under an ITN the night before the survey. Both indicators have declined since 2015.

Trends in ITN Access and Use

Percent of household population with access to an ITN and percent who slept under an ITN the night before the survey

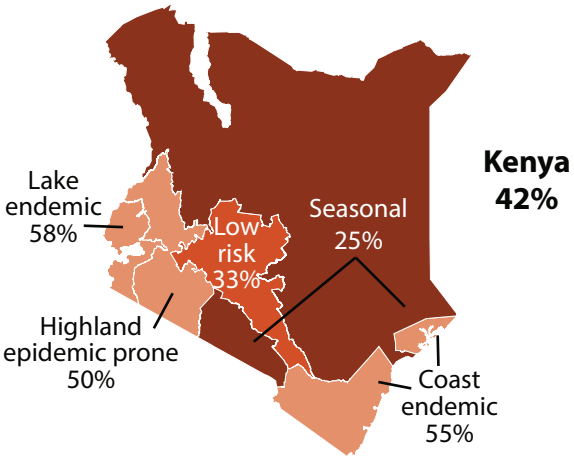


Note: The definition of an ITN in surveys prior to 2020 KMIS included nets that had been soaked with insecticides within the past 12 months.

Children under 5 and pregnant women are the groups most vulnerable to malaria. Forty-two percent of children under 5 and 40% of pregnant women slept under an ITN the night before the survey. By endemicity zone, ITN use among children ranges from 25% in Seasonal zone to 58% in Lake endemic zone. Use of ITNs by both children and pregnant women has decreased 2015. Among households that own an ITN, 72% of children under 5 and 73% of pregnant women slept under an ITN the night before the survey.

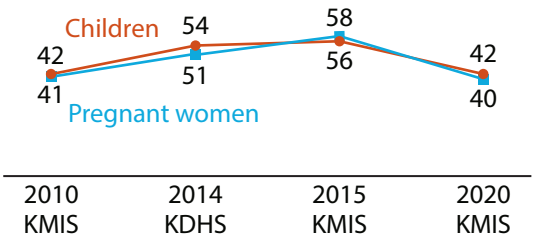
ITN Use among Children

Percent of children under 5 who slept under an ITN the night before the survey



Trends in ITN Use among Children and Pregnant Women

Percent of children under 5 and pregnant women age 15-49 who slept under an ITN the night before the survey



Note: The definition of an ITN in surveys prior to 2020 KMIS included nets that had been soaked with insecticides within the past 12 months.

Malaria in Pregnancy

Intermittent Preventive Treatment during Pregnancy (IPTp)

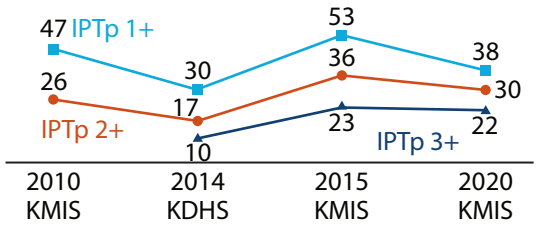
Malaria during pregnancy contributes to low birth weight, infant mortality, and other complications. To prevent malaria, pregnant women living in malaria-endemic areas in Kenya should receive 3+ doses of SP/Fansidar during their pregnancy. In Kenya, 38% of pregnant women received at least 1 dose of this intermittent preventive treatment, or IPTp, while 30% of women received 2+ doses and only 22% received 3+ doses. Uptake of IPTp 1+ and IPTp 2+ have declined since 2015, while uptake of IPTp 3+ has stagnated.

The Kenya National Malaria Strategy targets IPTp interventions to women living in malaria-endemic areas. Among pregnant women living in IPTp targeted malaria endemic areas, 49% in Lake endemic zone and 46% in Coast endemic zone received 3+ doses of IPTp. Urban women and those from the poorest households are least likely to receive IPTp 3+ among women in Coast endemic and Lake endemic zones.

Women who only received one or two doses of IPTp were asked why they did not complete the treatment. Forty-one percent said they were not given the treatment and 35% were unaware they had to take more.

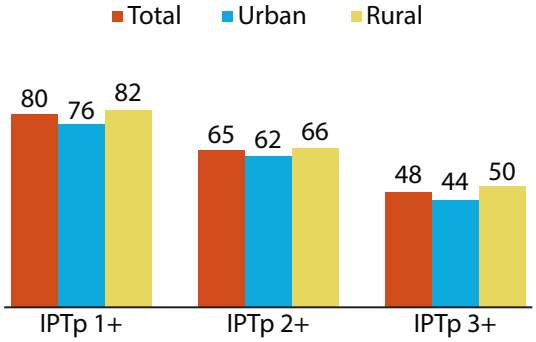
Trends in Intermittent Preventive Treatment during Pregnancy (IPTp)

Percent of women age 15-49 with a live birth in past two years who received at least 1, 2, or 3 doses of SP/Fansidar



IPTp in Lake Endemic and Coast Endemic Zones

Percent of women age 15-49 in Lake endemic and Coast endemic zones with a live birth in past two years who received at least 1, 2, or 3 doses of SP/Fansidar



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Case Management of Fever and Malaria in Children

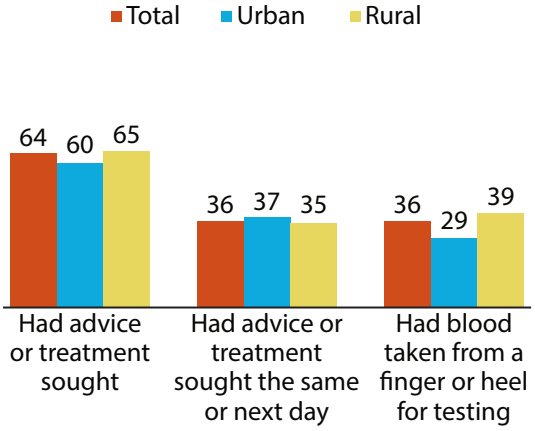
Care Seeking for Fever in Children

Fever is a major symptom of malaria in children. In Kenya, mothers were asked if their children had any fever during the 2 weeks before the survey and if they sought medical help. Overall, 17% of children under 5 had a fever in the 2 weeks before the survey.

Nearly two-thirds (64%) of children with recent fever had advice or treatment sought, a slight decrease from 72% in 2015. Sixty-five percent of rural children with recent fever had advice or treatment sought, compared to 60% of urban children. Nearly 40% of children with recent fever had advice or treatment sought the same or next day. Among children with recent fever for whom advice or treatment was sought, 68% received care from the public sector, 32% from the private sector, and 2% from other private sector sources.

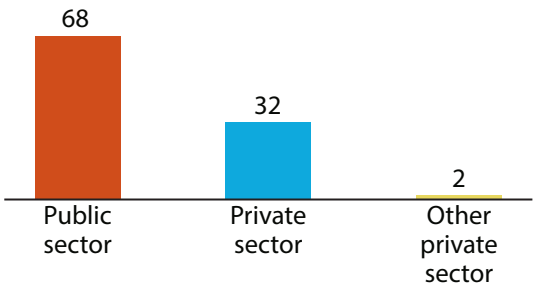
Care Seeking for Children with Fever by Residence

Among children under 5 with recent fever, percent who:



Source of Advice or Treatment for Children with Recent Fever

Among children under 5 with recent fever for whom advice or treatment was sought, percent for whom advice or treatment was sought from specific sources



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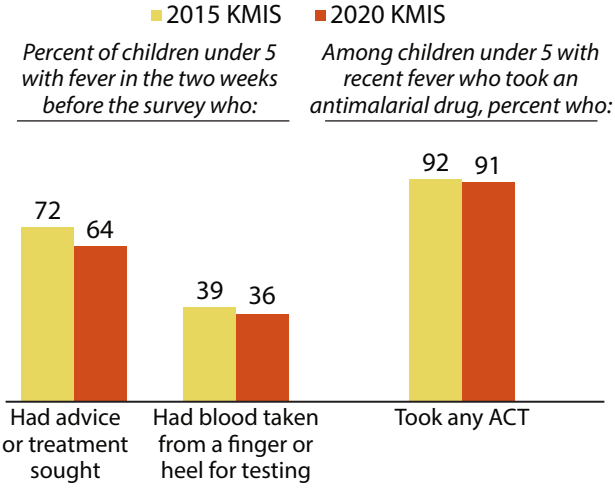
Diagnostic Testing

About 1 in 3 (36%) children with recent fever had blood taken from a finger or heel for diagnostic testing. Nearly 4 in 10 rural children with recent fever had blood taken from a finger or heel for testing, compared to 29% of urban children. Diagnostic testing has declined from 39% in 2015.

Use of Recommended Antimalarials

Artemisinin-based combination therapy (ACT) is the recommended first-line antimalarial drug for the treatment of malaria in Kenya. Among children under 5 with recent fever who took an antimalarial medication, 91% received ACT.

Trends in Case Management of Fever and Malaria in Children



Anaemia and Malaria Prevalence

Anaemia and Malaria Testing

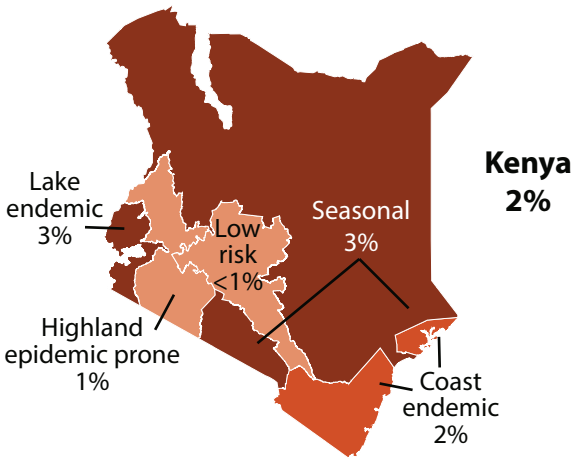
All children age 6 months to 14 years living in selected households were eligible for anaemia and malaria testing. Anaemia testing was carried out using the HemoCue system. Malaria testing was done through both rapid diagnostic testing known as RDT, as well as blood smear microscopy. Of the 12,253 eligible children, 94% provided blood for anaemia testing, RDT, and malaria microscopy. Malaria prevalence estimates are based only on microscopy results.

Prevalence of Low Haemoglobin

Anaemia is defined as a reduced level of haemoglobin in the blood. In the 2020 KMIS, 2% of children age 6 months to 14 years have low haemoglobin. The prevalence of low haemoglobin is highest among children age 9-11 months (8%), compared to 1% of children age 5-9 years and 10-14 years. By malaria endemicity zone, the prevalence of low haemoglobin ranges from <1% in Low risk zone to 3% in both Lake endemic and Seasonal zones. The prevalence of low haemoglobin has remained stagnant since 2015.

Prevalence of Low Haemoglobin in Children

Percent of children age 6 months to 14 years with haemoglobin <8 g/dl



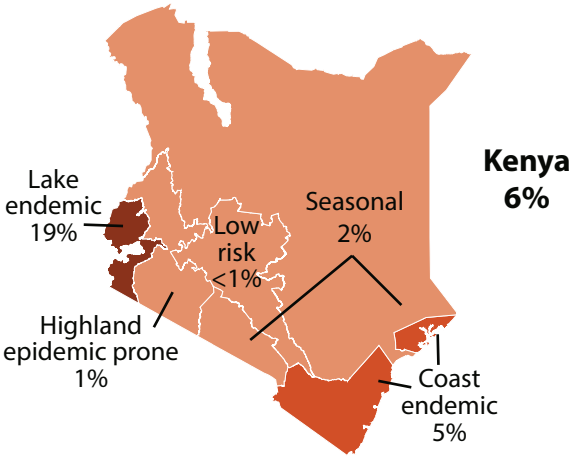
Malaria Prevalence

In Kenya, 6% of children age 6 months to 14 years tested positive for malaria by microscopy. Malaria prevalence generally increases with age, from 1% among children age 6-8 months to 8% among children age 10-14 years. Malaria prevalence is higher among rural children than urban children (7% versus 3%). Malaria prevalence varies greatly by endemicity zone, ranging from <1% in Low risk zone to 19% in Lake endemic zone. Malaria prevalence has decreased from 8% in 2015 to 6% in 2020.

Among children who tested positive for malaria, 76% had the presence of *P. falciparum* infection, 4% had *P. malariae*, and 1% had *P. ovale* infection. Overall, 19% had mixed infections of *P. falciparum* and *P. malariae*.

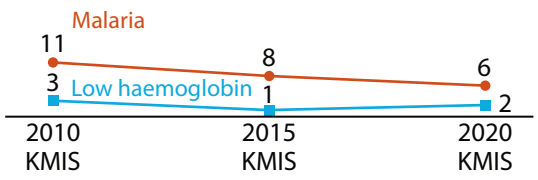
Malaria Prevalence

Percent of children age 6 months to 14 years who tested positive for malaria by microscopy



Trends in Prevalence of Malaria and Low Haemoglobin

Percent of children age 6 months to 14 years with low haemoglobin <8.0 g/dl and who tested positive for malaria by microscopy



Malaria Beliefs and Exposure to Malaria Messages

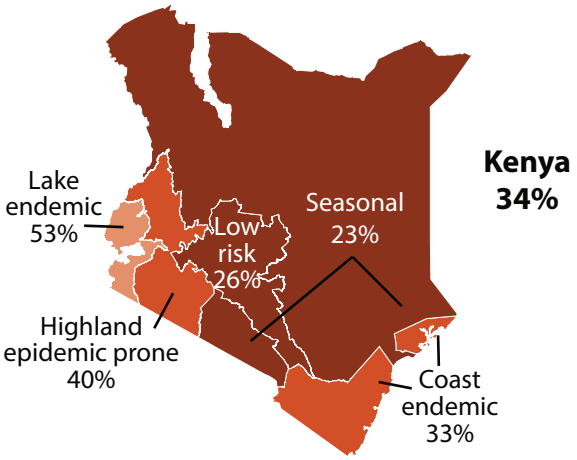
Exposure to Malaria Messages

Overall, 34% of women age 15-49 have seen or heard a message about malaria in the six months before the survey. The most common sources of malaria messages are the radio (55%), television (40%), health care provider (6%), poster/billboard (5%), community health worker (5%), and social media (5%). Exposure to malaria messages ranges from a low of 23% in Seasonal zone to a high of 53% in Lake endemic zone. Exposure to malaria messages increases with education level, from 12% of women with no education to 42% of women with more than secondary education.

Among women who have seen or heard a malaria message in the six months before the survey, the most common messages are as follows: "sleep under an ITN" (49%), "if you have symptoms of malaria, go to a health facility" (34%), and "malaria kills" (26%).

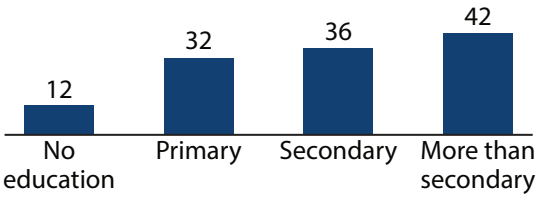
Exposure to Malaria Messages

Percent of women age 15-49 who saw or heard a message on malaria in the 6 months before the survey



Exposure to Malaria Messages by Education

Percent of women age 15-49 who saw or heard a message on malaria in the 6 months before the survey



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Malaria Knowledge and Attitudes

Overall, 85% of women age 15-49 know ways to avoid getting malaria. Nearly all women (94%) know sleeping under an ITN prevents malaria. Other commonly reported ways to avoid malaria include keep surrounding clean (26%) and fill in stagnant waters (21%).

Among women who know how to avoid getting malaria, 29% know that ACT/AL is the recommended treatment for malaria. Nearly 6 in 10 women do not know the recommended treatment for malaria. Eighty-six percent of women who know how to avoid malaria are confident in their ability to hang a mosquito net in their household.

Malaria programs can influence behaviours if they portray certain behaviours as socially unacceptable or socially desirable. Sixty-two percent of women believe that the majority of their community currently practice specific malaria-related behaviours, such as taking their children with fever to a health care provider or sleeping under an ITN.

INDICATORS

		Residence	
Malaria Prevention (%)	**Kenya**	**Urban**	**Rural**
Households with at least 1 ITN[1]	49	44	52
Households with at least 1 ITN for every 2 persons in the household[1]	29	28	29
Access to an ITN[1,2]	40	39	40
Household members who slept under an ITN the night before the survey[1]	35	35	35
Children under 5 who slept under an ITN the night before the survey[1]	42	47	40
Children under 5 who slept under an ITN the night before the survey in households with at least 1 ITN[1]	72	83	67
Pregnant women age 15-49 who slept under an ITN the night before the survey[1]	40	35	44
IPTp 1+[4]	38	35	39
IPTp 2+[4]	30	30	30
IPTP 3+[4]	22	21	22
Malaria in Children (%)			
Children under 5 with fever in the 2 weeks before the survey	17	17	17
Children under 5 with recent fever for whom advice or treatment was sought	64	60	65
Children under 5 with recent fever for whom advice or treatment was sought the same or next day	36	37	35
Children under 5 with recent fever who had blood taken from a finger or heel for testing	36	29	39
Children under 5 with recent fever who took any ACT	18	10	23
Prevalence of low haemoglobin among children age 6 months to 14 years (<8.0 g/dl)	2	1	2
Malaria prevalence by microscopy among children age 6 months to 14 years	6	3	7
Exposure to Malaria Messages and Beliefs (among women age 15-49) (%)			
Women who have seen or heard a malaria message in the past 6 months	34	35	34
Women who know there are ways to avoid getting malaria	85	90	82
Women who know that ACT/AL is a recommended treatment for malaria[5]	29	21	34
Women confident in ability to hang a mosquito net in own household[5]	86	85	86

[1] The definition of an ITN in surveys prior to 2020 KMIS included nets that had been soaked with insecticides within the past 12 months. [2] Percent of de facto household population who could sleep under an ITN if each ITN in the household were used by 2 people. [3] Figures in parentheses are based on 25-49 unweighted cases. [4] Percent of women age 15-49 with a live birth in past two years who received at least 1, 2, or 3 doses of SP/Fansidar. [5] Among women age 15-49 who know there are ways to avoid getting malaria.

Malaria Endemicity Zone				
Highland epidemic prone	Lake endemic	Coast endemic	Seasonal	Low risk
65	78	58	35	31
43	42	33	18	18
55	56	45	23	26
47	53	42	22	21
50	58	55	25	33
71	69	77	73	75
51	67	(43)[3]	19	(26)[3]
34	82	74	22	12
22	68	57	17	11
16	49	46	12	8
16	29	23	15	10
74	57	64	69	(64)[3]
32	31	32	41	(44)[3]
43	48	40	32	(9)[3]
22	34	7	12	(<1)[3]
1	3	2	3	<1
1	19	5	2	<1
40	53	33	23	26
87	89	83	78	85
30	74	28	17	8
93	90	89	83	80