

KENYA

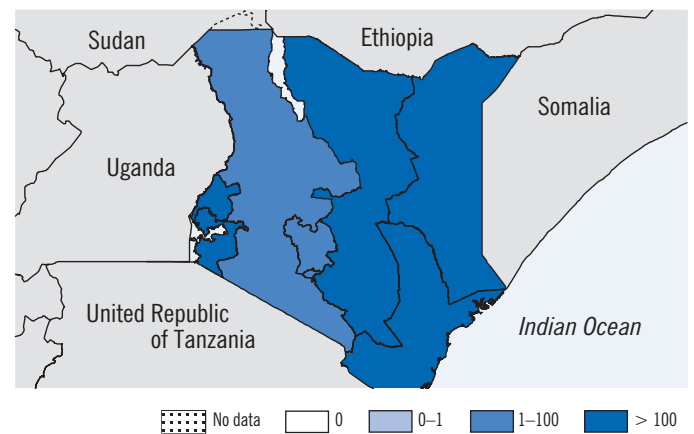
Kenya had an estimated 15 million malaria cases in 2006. The majority are due to *P. falciparum*. Almost all the reported 9 million suspected malaria cases in 2007 were unconfirmed. The number of reported cases increased between 2001 and 2007; it is not known whether this represents improved reporting or an increase in incidence. No reports of malaria deaths were provided for 2008, although about 40 000 deaths were reported in 2006. The national malaria control programme distributed 10.4 million LLINs during 2006–2008, adequate to cover 31% of the population at risk. IRS is implemented in selected districts, covering 307 207 households in 2008 and protecting about 3 million people at risk. About 5 million ACT treatment courses were delivered in 2006, fewer than would be needed to treat all reported malaria cases in the public sector. There were no data on ACTs delivered in 2007 and 2008. In the 2008 demographic and health survey, 48% of households owned an ITN, 39% of children under 5 had slept under an ITN the previous night and 8% of febrile children received ACT treatment. Funding for malaria control increased from less than US\$ 1 million in 2003 to about US\$ 62 million in 2008, mainly from the Global Fund, the United States President's Malaria Initiative, the United Kingdom Department for International Development and nongovernmental organizations.

I. EPIDEMIOLOGICAL PROFILE

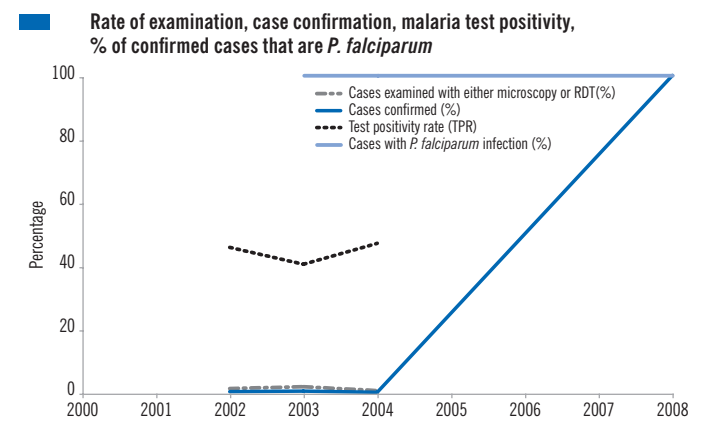
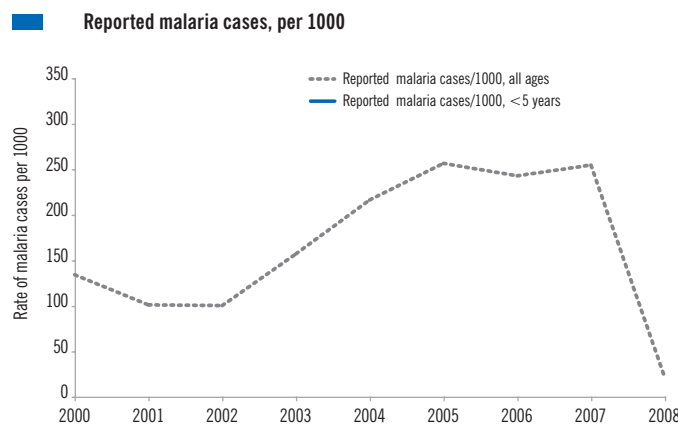
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	38 765	
< 5 years	6 540	17
≥ 5 years	32 226	83
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	13 991	36
Low transmission (0–1/1000)	15 417	40
Malaria-free (0 cases)	9 357	24
Rural population	30 411	78
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>gambiae</i> , <i>arabiensis</i> , <i>funestus</i> , <i>melas</i> , <i>nili</i> , <i>paludis</i> , <i>pharoensis</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

Stratification of burden (reported cases, per 1000)

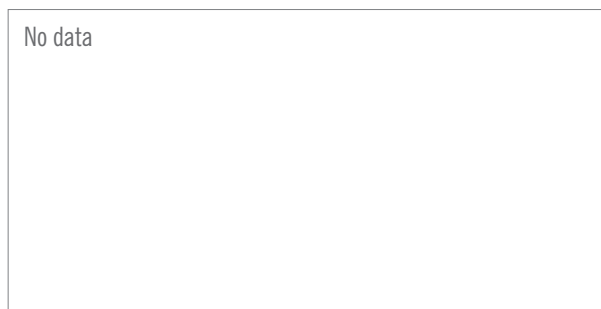


Trends in malaria morbidity and mortality

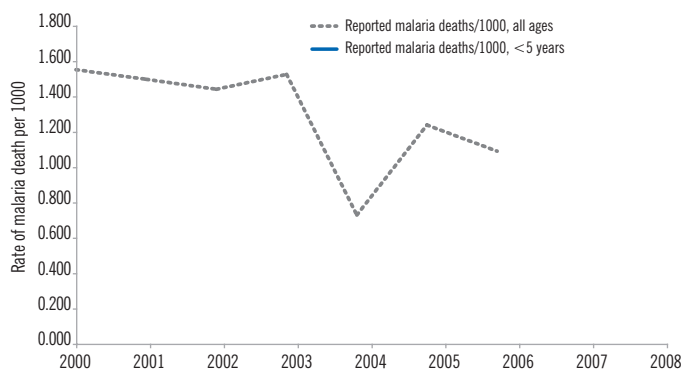


Year	Reported malaria cases, all ages	Reported malaria cases, < 5 years	All-cause outpatient consultations, all ages	All-cause outpatient consultations, < 5 years	Examined	Positive	<i>P. falciparum</i>	Reporting completeness of outpatient health facilities (%)	Reporting completeness of districts (%)
2000	4 216 531								
2001	3 262 931		10 443 984						
2002	3 319 399		9 944 058		43 643	20 049			
2003	5 338 008		15 067 165		96 893	39 383	39 383		
2004	7 545 541		22 691 025		59 995	28 328	28 328		
2005	9 181 224		33 256 138						
2006	8 926 058		28 955 219						
2007	9 610 691		31 168 878						
2008			15 608 829	4 804 338		839 904	839 904		

Reported malaria admissions, per 1000



Reported malaria deaths, per 1000



Year	Reported malaria admissions, all ages	Reported malaria admissions, < 5 years	All-cause admissions, all ages	All-cause admissions, < 5 years	Reported malaria deaths, all ages	Reported malaria deaths, < 5 years	All-cause deaths, all ages	All-cause deaths, < 5 years	Reporting completeness of inpatient health facilities (%)	Reporting completeness of districts (%)
2000					48 767		214 864			
2001					48 286		199 358			
2002			116 276		47 697		200 549			
2003			126 678		51 842		213 164			
2004			530 640		25 403		123 674			
2005					44 328		194 885			
2006			1 288 423		40 079		216 158			
2007										
2008			234 576							

II. INTERVENTION POLICIES AND STRATEGIES

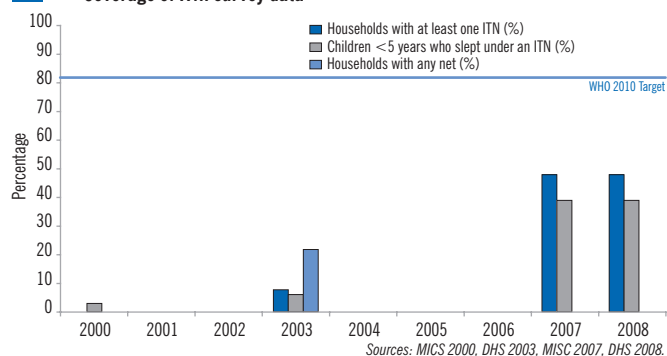
Intervention	WHO-RECOMMENDED POLICIES / STRATEGIES	WHO-RECOMMENDED POLICIES / STRATEGIES		OPTIONAL POLICIES / STRATEGIES	OPTIONAL POLICIES / STRATEGIES	
		Yes or No	Year adopted		Yes or No	Year adopted
Insecticide-treated nets (ITN)	Distribution of ITN/LLINs – Free	Yes	2006	Distribution – Antenatal care	Yes	2005
	Targeting all age groups	No	–	Distribution – EPI routine and campaign	Yes	2006
				Targeting children < 5 years and pregnant women	Yes	2001
				ITN distribution is subsidized	Yes	2002
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	No	–	Insecticide-resistance management implemented	No	–
	DDT is used for IRS (public health) only	No	–	Where IRS is conducted, other options are also implemented, e.g. ITN	Yes	2003
				IRS is used for prevention and control of epidemics	Yes	2003
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	Yes	2001			
Case management	Oral artemisinin monotherapies banned (prohibited from registration or removed from the system)	Yes	2006	Parasitological confirmation for patients ≥ 5 years only	No	–
	Parasitological confirmation for patients of all ages	No	–	Malaria diagnosis is free of charge in the public sector	Yes	2006
	ACT is free of charge for < 5 years old in the public sector	Yes	2006	ACT is free of charge for patients ≥ 5 years in the public sector	Yes	2006
	Diagnosis of malaria of inpatients is based on parasitological confirmation	Yes	1997	ACT is delivered at community level through community agents (beyond the health facilities)	No	–
	Pre-referral treatment with quinine or artemether IM or artesunate suppositories	Yes	2006	Uncomplicated malaria cases are admitted	No	–
	Oversight regulation of case management in the private sectors	No	–			
	RDTs used at community level	No	–			

Results of therapeutic efficacy tests

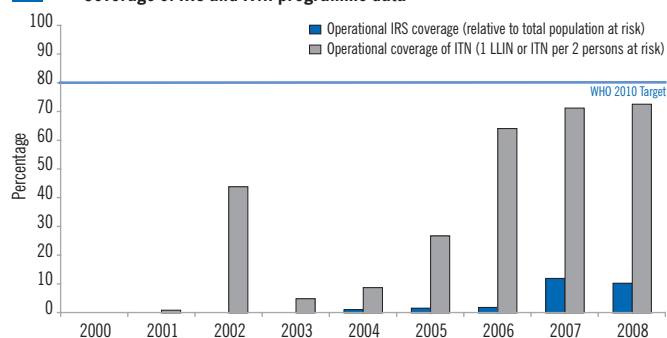
Antimalarial policy	Type of medicine	Year adopted	Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AL	2004							
First-line treatment of <i>P. falciparum</i> (confirmed)	AL	2004							
Treatment failure of <i>P. falciparum</i>	QN(7d)	2004							
Treatment of severe malaria	QN(7d)	2004							
Treatment of <i>P. vivax</i>	–	–							

III. IMPLEMENTING MALARIA CONTROL

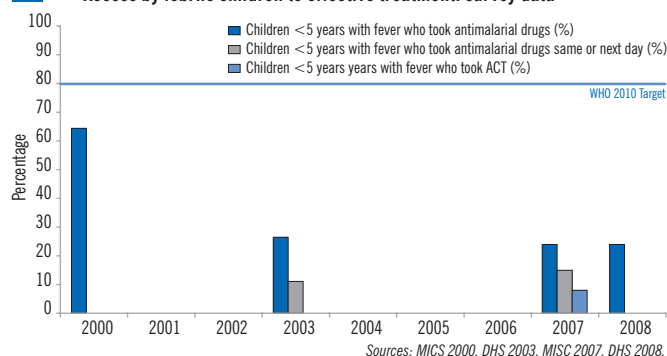
Coverage of ITN: survey data



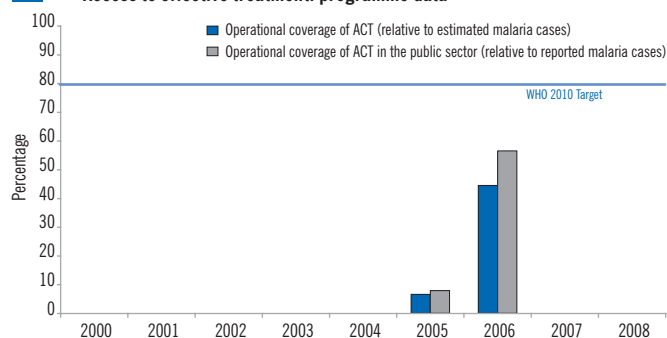
Coverage of IRS and ITN: programme data



Access by febrile children to effective treatment: survey data



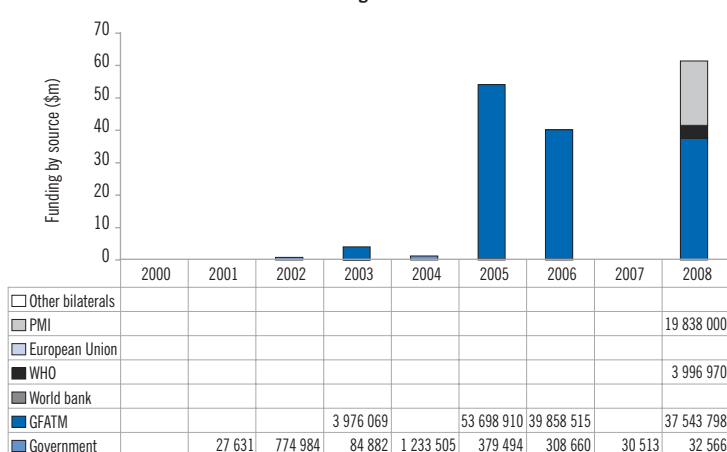
Access to effective treatment: programme data



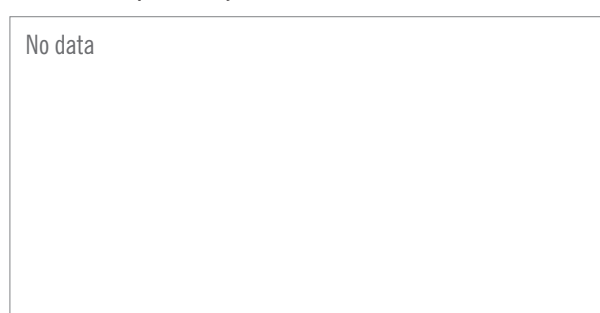
Year	Pregnant women who slept under any net (%)	Pregnant women who slept under an ITN (%)	Children < 5 years with fever (%)	Febrile children < 5 years who sought treatment in HF (%)	Number of households protected by IRS	Number of people protected by IRS	Number of ITNs and/or LLINs	Number of 1st-line treatment courses received	Number of ACT treatment courses received
2000			—	—					
2001							120 010		
2002							5 550 563		
2003	13	5	—	—			643 218		
2004					300 000	300 000	1 169 600		
2005					350 000	465 000	3 655 576	723 333	723 333
2006					380 000	550 000	7 102 752	5 049 000	5 049 000
2007			—	—	390 058	3 459 207	1 996 875		
2008			—	—	307 207	3 061 966	2 786 742		

IV. FINANCING MALARIA CONTROL

Governmental and external financing



Breakdown of expenditure by intervention in 2008



V. SOURCE OF INFORMATION

PROGRAMME DATA

Reported cases	Surveillance data
Operational coverage of ITNs, IRS and access to medicines	Programme report
Financial data	Programme report

SURVEY AND OTHER DATA

Insecticide-treated nets (ITN)	MICS 2000, DHS 2003, MIS 2007, DHS 2008
Treatment	MICS 2000, DHS 2003, MIS 2007, DHS 2008
Use of health services	DHS 2003