

GHANA

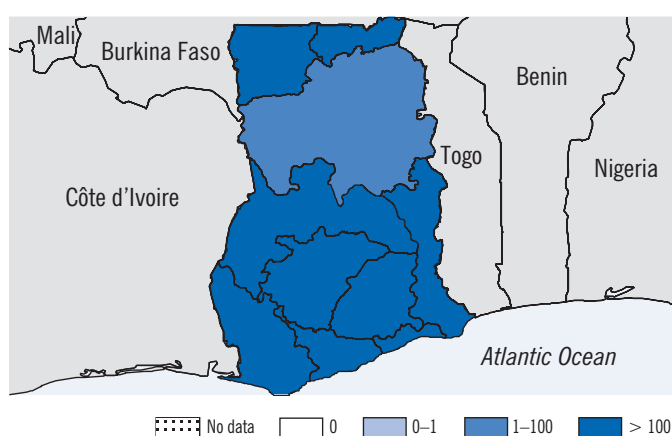
Ghana had an estimated 8.3 million malaria cases in 2006 and 3.2 million in 2008. Most cases are caused by *P. falciparum*; 26% of the reported cases were confirmed in 2008. There was no evidence of a reduction in the number of cases between 2001 and 2007, and the numbers of reported inpatient cases and deaths have increased. It is not known if the rise is due to better reporting or a change in the incidence of malaria. The programme delivered about 4.7 million LLINs during 2006–2008, adequate to cover 40% of the population at risk. The programme implemented IRS covering 68 000 households, protecting about 600 000 people at risk in selected areas in 2008. In the 2008 demographic and health survey, 33% of households owned an ITN, and only 19% of children under 5 had slept under an ITN the previous night. While 24% of febrile children received an antimalarial drug, only 12% were given ACT. Funding for malaria control increased from almost nothing in 2005 to about US\$ 90 million during 2006–2008, with annual expenditure of US\$ 30 million. Major funding is provided by the Government, the Global Fund, the World Bank and the United States President's Malaria Initiative.

I. EPIDEMIOLOGICAL PROFILE

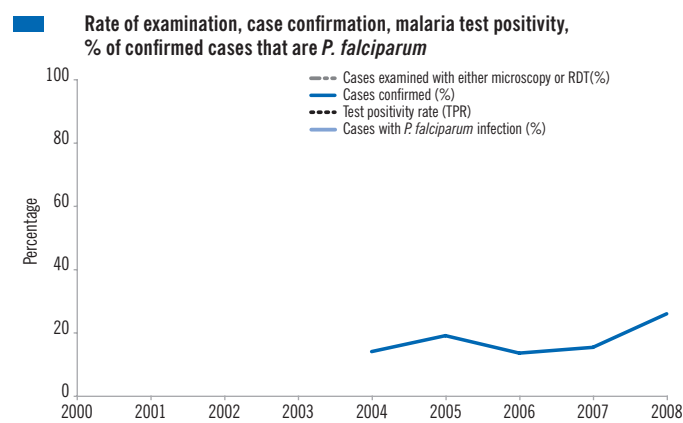
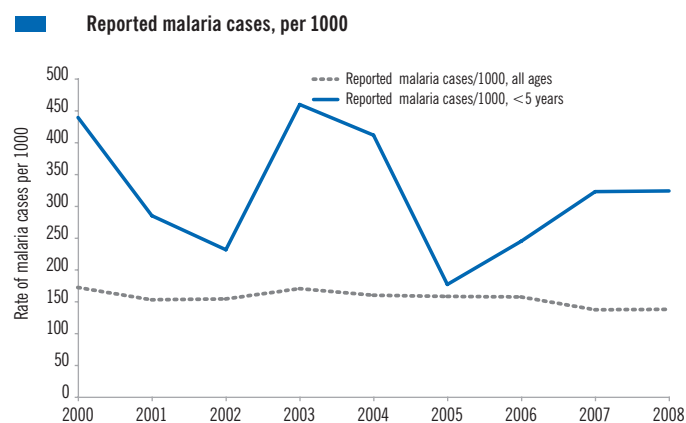
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	23 351	
< 5 years	3 319	14
≥ 5 years	20 032	86
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	23 351	100
Low transmission (0–1/1000)	0	0
Malaria-free (0 cases)	0	0
Rural population	11 675	50
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>gambiae</i> , <i>funestus</i> , <i>brochieri</i> , <i>coustani</i> , <i>flavicoستا</i> , <i>hancocki</i> , <i>hargreavesi</i> , <i>melas</i> , <i>nili</i> , <i>paludis</i> , <i>pharoensis</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

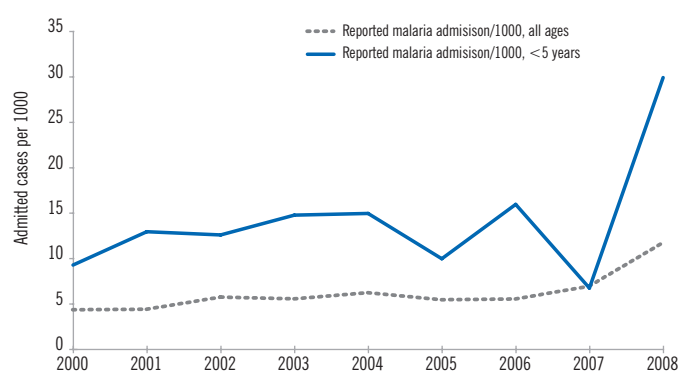
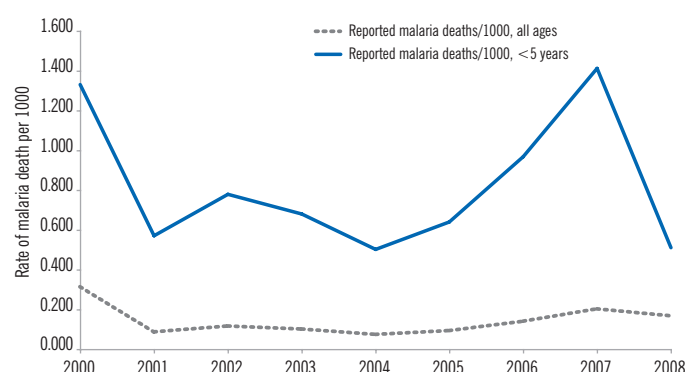
Stratification of burden (reported cases, per 1000)



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	3 349 528	1 303 685	7 000 000	2 591 570				32	52
2001	3 044 844	856 872	6 904 408	1 518 970				32	52
2002	3 140 893	705 288	7 253 794	1 679 257				32	52
2003	3 552 896	1 421 148	8 129 510	1 900 809				30	57
2004	3 416 033	1 289 874	7 540 470	1 318 900		475 441		30	56
2005	3 452 969	562 941	7 753 845	1 757 833		655 093		31	81
2006	3 511 452	789 952	9 114 401	1 712 728		472 255		31	65
2007	3 123 147	1 056 331	9 259 343	3 417 098		476 484		32	70
2008	3 200 147	1 074 267	10 323 853	2 191 381	827 436	827 438		25	81

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	84 091	27 478	263 269	98 507	6 108	3 952	18 323	8 872		
2001	87 236	38 911	268 598	102 397	1 717	1 717	7 805	6 265		
2002	116 600	38 340	310 793	100 895	2 376	2 376	8 714	5 913		
2003	115 401	45 648	517 566	120 126	2 103	2 103	7 636	5 983		
2004	132 566	46 886	844 091	123 384	1 575	1 575	5 727	5 887		
2005	118 449	31 644	483 038	174 522	2 037	2 037	6 610	4 532		
2006	122 928	51 407	356 000	97 860	3 125	3 125	15 102	4 988		
2007	157 628	22 019	556 036	113 952	4 622	4 622	18 395	5 263		
2008	272 802	99 217	900 242	181 427	3 889	1 697	21 246	4 907		

II. INTERVENTION POLICIES AND STRATEGIES

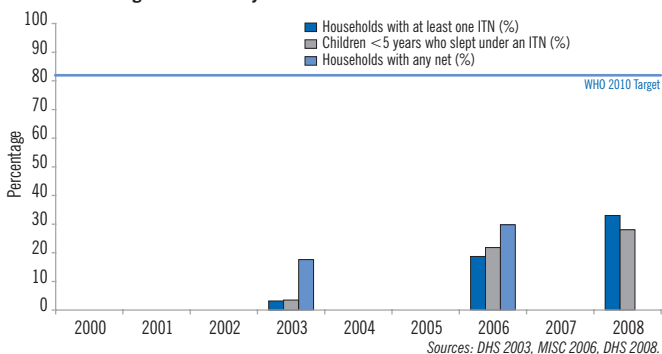
Intervention	WHO-RECOMMENDED POLICIES / STRATEGIES	Yes or No	Year adopted	OPTIONAL POLICIES / STRATEGIES	
				Yes or No	Year adopted
Insecticide-treated nets (ITN)	Distribution of ITN/LLINs – Free	Yes	2006	Distribution – Antenatal care	Yes 1999
	Targeting all age groups	No	–	Distribution – EPI routine and campaign	Yes 2000
				Targeting children < 5 years and pregnant women	Yes 1999
				ITN distribution is subsidized	Yes 1997
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	Yes	2005	Insecticide-resistance management implemented	Yes 2004
	DDT is used for IRS (public health) only	No	–	Where IRS is conducted, other options are also implemented, e.g. ITN	Yes 2005
				IRS is used for prevention and control of epidemics	Yes 2004
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	Yes	2003		
Case management	Oral artemisinin monotherapies banned (prohibited from registration or removed from the system)	Yes	2006	Parasitological confirmation for patients ≥ 5 years only	Yes 1997
	Parasitological confirmation for patients of all ages	No	–	Malaria diagnosis is free of charge in the public sector	No –
	ACT is free of charge for < 5 years old in the public sector	No	–	ACT is free of charge for patients ≥ 5 years in the public sector	No –
	Diagnosis of malaria of inpatients is based on parasitological confirmation	No	–	ACT is delivered at community level through community agents (beyond the health facilities)	Yes 2008
	Pre-referral treatment with quinine or artemether IM or artesunate suppositories	Yes	1998	Uncomplicated malaria cases are admitted	No –
	Oversight regulation of case management in the private sectors	Yes	1997		
	RDTs used at community level	No	–		

Results of therapeutic efficacy tests

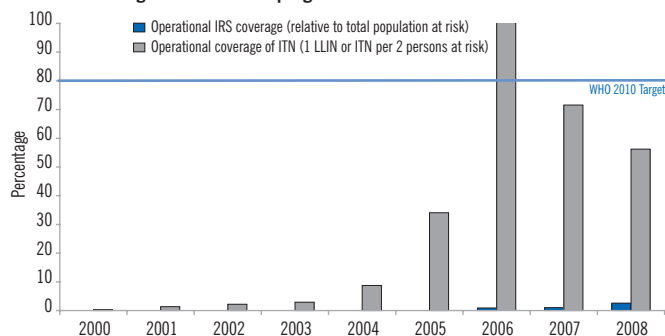
Antimalarial policy	Type of medicine	Year adopted	Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AL, AS + AQ	2004							
First-line treatment of <i>P. falciparum</i> (confirmed)	AL, AS + AQ	2004							
Treatment failure 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

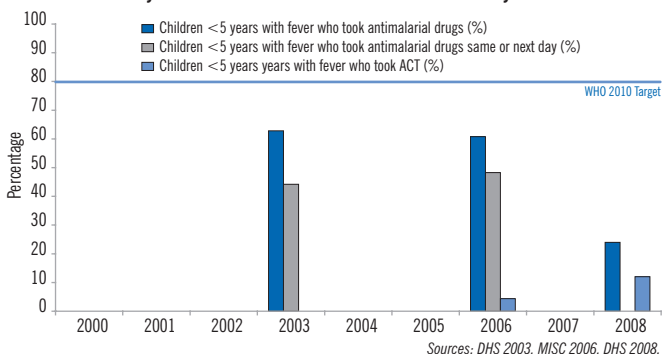
Coverage of ITN: survey data



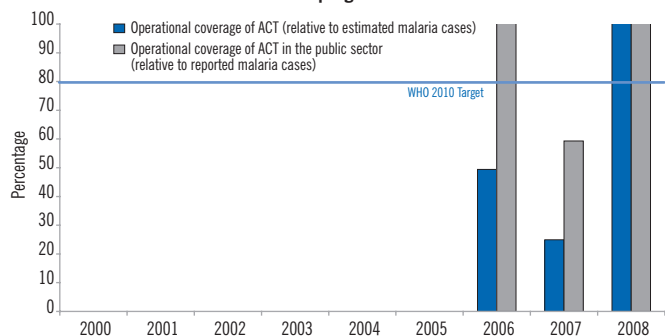
Coverage of IRS and ITN: programme data



Access by febrile children to effective treatment: survey data



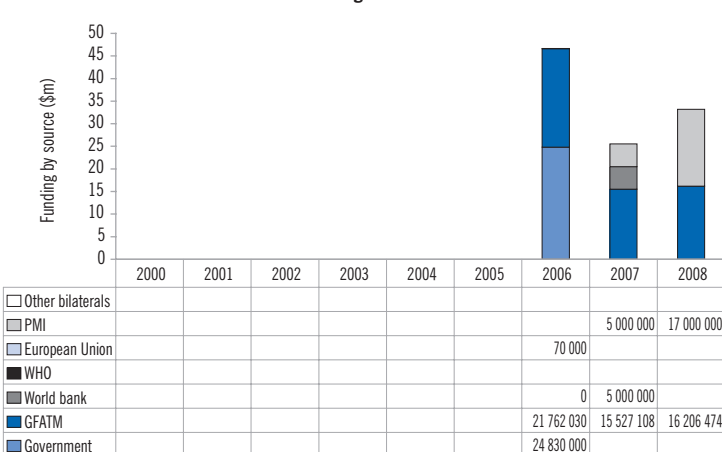
Access to effective treatment: programme data



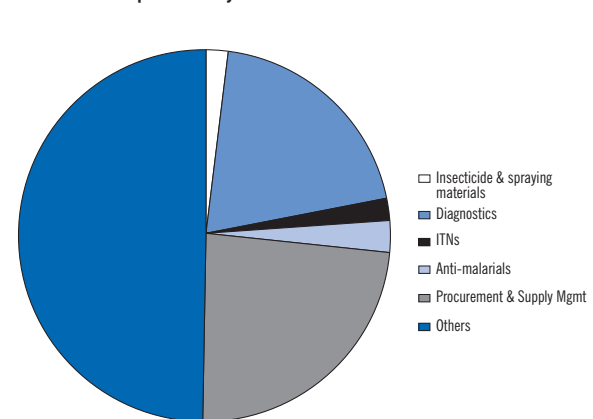
Year	Pregnant women who slept under any net (%)	Pregnant women who slept under an ITN (%)	Children < 5 years with fever (%)	Febrile children < 5 years who sought treatment in HF (%)	Number of households protected by IRS	Number of people protected by IRS	Number of ITNs and/or LLINs	Number of 1st-line treatment courses received	Number of ACT treatment courses received
2000							15 000		
2001							60 000		
2002							742 000		
2003		3	—	—			85 000		
2004							375 000		
2005							618 855		
2006			—	—	134 000	200 000	2 100 000	3 600 000	3 600 000
2007					154 000	240 000	1 477 538	2 018 967	1 852 967
2008			—	—	68 252	601 973	2 100 000	9 616 195	9 783 983

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)	DHS 2003, MICS 2006, DHS 2008
Treatment	DHS 2003, MICS 2006, DHS 2008
Use of health services	DHS 2003