
PROFILES

31 high-burden countries

ANGOLA

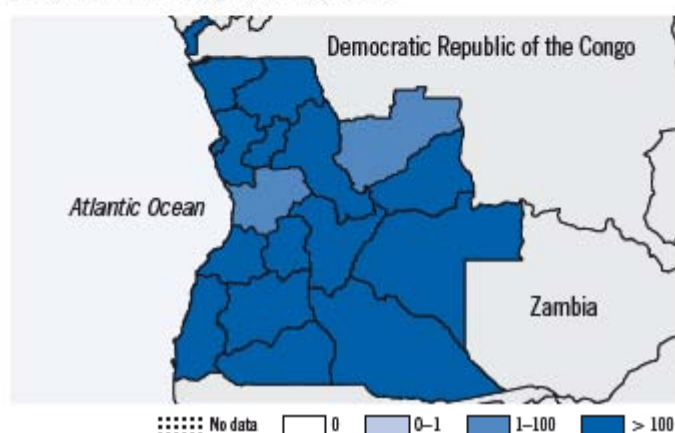
Angola had an estimated 3.9 million cases of malaria in 2006. Transmission occurs all year round, with greater seasonality in the south. In 2008, 77% of the 3 432 424 suspected malaria cases were parasitologically tested. No adequate historical data were available to identify changes in the number of confirmed outpatient cases, but inpatient malaria cases and deaths in 2008 have decreased by about 52% and 42%, respectively, from the average of 2001–2006. It is not clear, however, if this is a true decrease, as there was no report on the completeness of data. Implementation of IRS, which began in 2005, continued in selected districts, covering 133 687 households and protecting over 736 000 people at risk (4%). The programme delivered 3.8 million LLINs during 2006 and 2008, adequate to cover 45% of the 16 million people at risk. In the 2006–2007 survey, 33% of households had a mosquito net, but only 18% of children slept under an ITN. The programme delivered over 2 million ACT treatment courses in 2007 and 2.3 million in 2008, enough to treat 69% of reported malaria cases. Funding increased from US\$ 16 million in 2004 to over US\$ 36 million in 2007, financed by the government, the Global Fund, United Nations agencies, the World Bank, bilateral agencies and others.

I. EPIDEMIOLOGICAL PROFILE

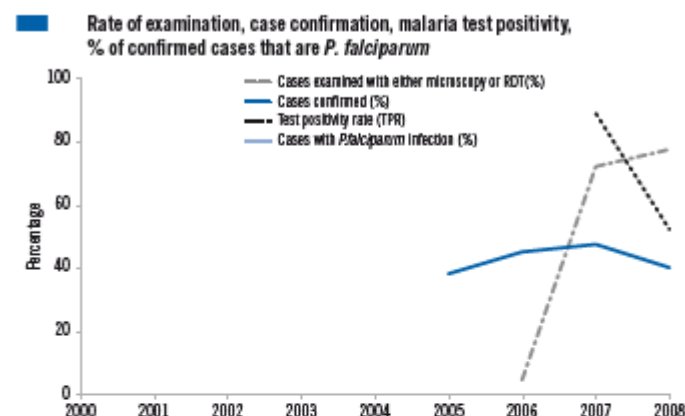
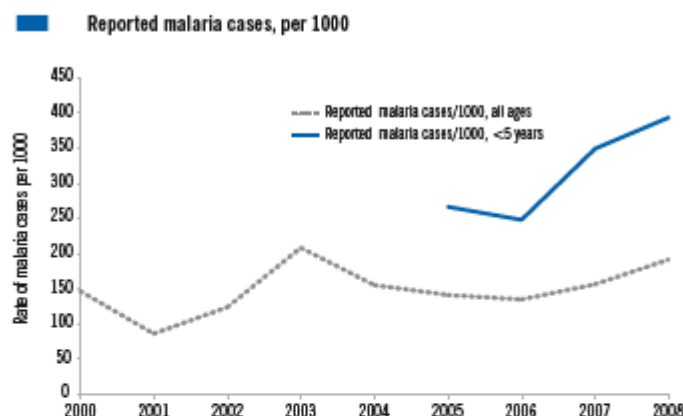
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	18 021	
< 5 years	3 170	18
≥ 5 years	14 850	82
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	18 021	100
Low transmission (0–1/1000)	0	0
Malaria-free (0 cases)	0	0
Rural population	7 795	43
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>gambiae</i> , <i>arabiensis</i> , <i>funestus</i> , <i>coustani</i> , <i>flavicocta</i> , <i>melas</i> , <i>nii</i> , <i>paludis</i> , <i>pharoensis</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

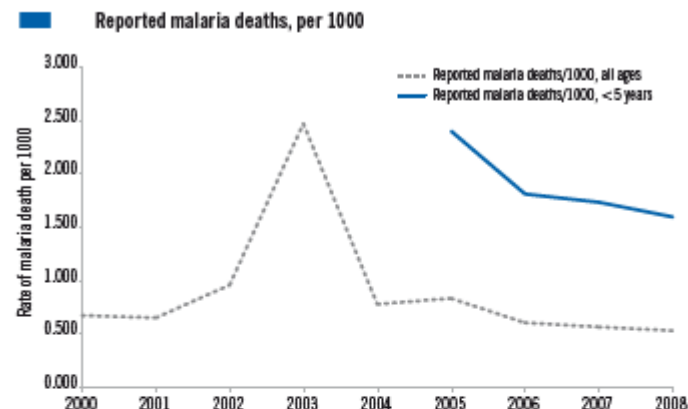
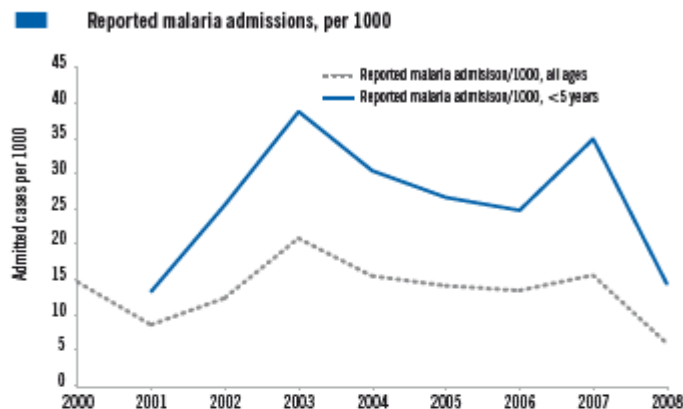
Stratification of burden (reported cases, per 1000)



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	2 080 348		2 585 804						
2001	1 249 767		1 971 655						
2002	1 862 662		2 919 857						
2003	3 246 258		4 293 505						
2004	2 489 170		3 829 317						
2005	2 329 316	815 314	3 608 468			889 572			
2006	2 283 097	770 639	3 833 556		106 801	1 029 198			
2007	2 726 530	1 097 783	4 170 770		1 964 879	1 295 535			
2008	3 432 424	1 246 884	8 617 884	2 710 349	2 659 344	1 377 992			



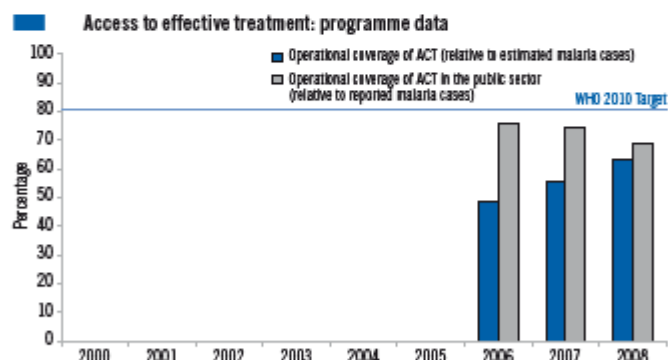
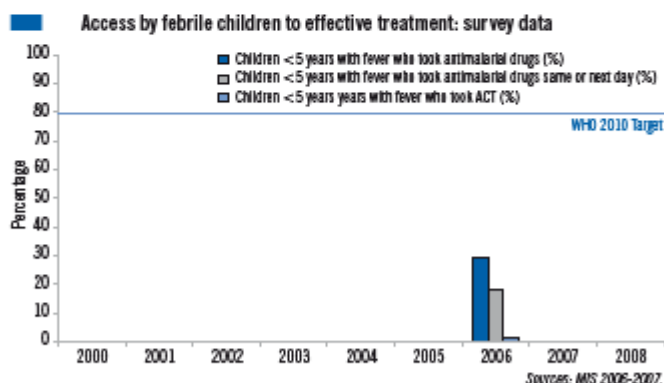
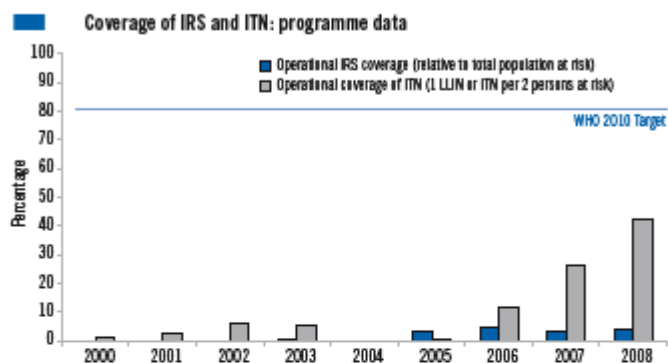
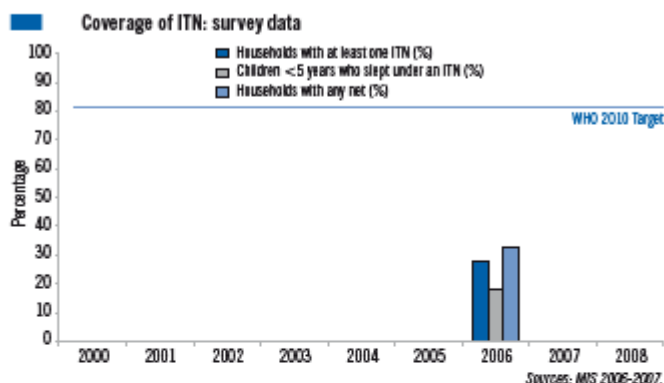
Year	Reported malaria admissions, all ages	Reported malaria admissions, < 5 years	All-cause admissions, all ages	All-cause admissions, < 5 years	Reported malaria deaths, all ages	Reported malaria deaths, < 5 years	All-cause deaths, all ages	All-cause deaths, < 5 years	Reporting completeness of inpatient health facilities (%)	Reporting completeness of districts (%)
2000	208 035				9 510		12 434			
2001	124 977	36 307			9 473		15 206			
2002	186 266	72 102			14 434		24 503			
2003	324 626	112 913			38 598		46 406			
2004	248 917	91 039			12 459		19 419			
2005	232 932	81 531			13 768	7 354	20 894			
2006	228 310	77 064			10 220	5 634	20 646			
2007	272 653	109 778			9 812	5 452	16 787			
2008	106 345	45 523			9 465	5 060	15 070			

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	2001	Distribution – Antenatal care	Yes	2001
	Targeting all age groups	No	–	Distribution – EPI routine and campaign	Yes	2005
				Targeting children < 5 years and pregnant women	Yes	2000
				ITN distribution is subsidized	Yes	2005
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	Yes	2003	Insecticide-resistance management implemented	Yes	2005
	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	2005			
Case management	Oral artemisin in monotherapies banned (prohibited from registration or removed from the system)	Yes	2004	Parasitological confirmation for patients ≥ 5 years only	No	–
	Parasitological confirmation for patients of all ages	Yes	2001	Malaria diagnosis is free of charge in the public sector	Yes	2002
	ACT is free of charge for < 5 years old in the public sector	Yes	2005	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	2005	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	2004	Uncomplicated malaria cases are admitted	No	–
	Oversight regulation of case management in the private sectors	No	–			
	RDTs used at community level	No	–			

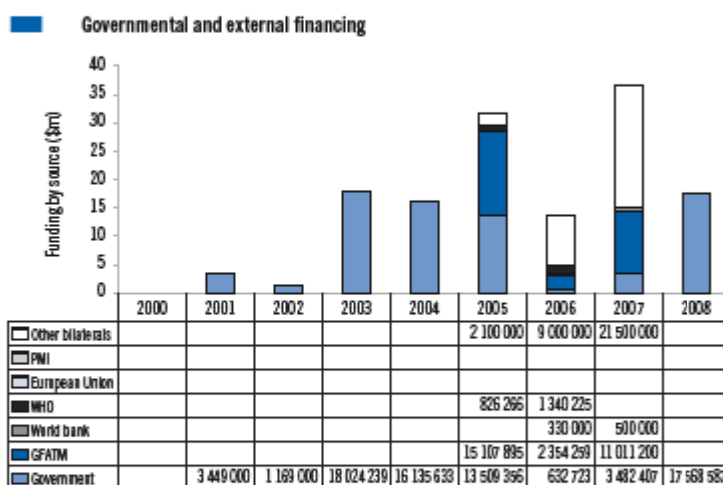
Antimalarial policy	Type of medicine	Year adopted	Results of therapeutic efficacy tests					
			Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25% 75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AL	2006	2004-2004	2	1.1	0	2.3	0 2.3
First-line treatment of <i>P. falciparum</i> (confirmed)	AL	2006	2004-2004	2	1.1	0	2.3	0 2.3
Treatment failure of <i>P. falciparum</i>	QN(7d)	2006						
Treatment of severe malaria	QN(7d)	2006						
Treatment of <i>P. vivax</i>	–	–						

III. IMPLEMENTING MALARIA CONTROL



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							85 000		
2001							204 600		
2002							450 000		
2003						30 000	430 000		
2004									
2005					100 000	590 000	45 889		
2006		22	-	-	115 000	780 257	984 760	1 700 000	1 736 200
2007			-	-	110 826	612 776	1 495 165	2 031 760	2 031 760
2008			-	-	133 687	736 231	1 471 200	2 363 970	2 363 970

IV. FINANCING MALARIA CONTROL



V. SOURCE OF INFORMATION

PROGRAMME DATA	SURVEY AND OTHER DATA
Reported cases	Surveillance data
Operational coverage of ITNs, IRS and access to medicines	Insecticide-treated nets (ITN)
Financial data	Treatment
	Use of health services
	MIS 2006-07, MIS 2007
	MIS 2006-07, MIS 2007
	MICS 2001

BANGLADESH

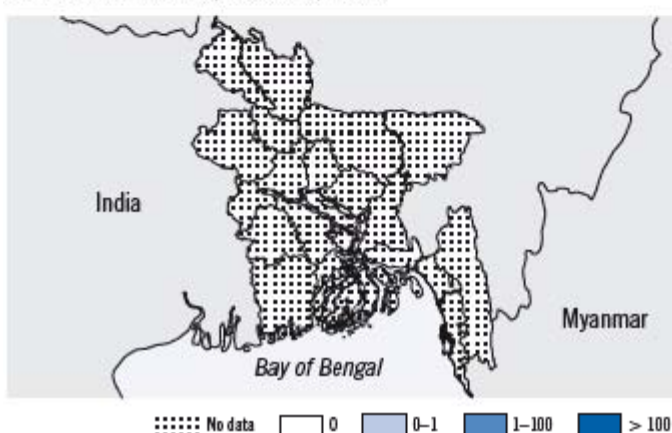
A total of 50.6 million people are at risk for malaria, and more than 95% of all the malaria cases in the country are reported from 13 highly endemic districts, affecting 11 million people. The three Hill Tract Districts (Bandarban, Khagrachari and Rangamati) and the Cox's Bazar district report more than 80% of all malaria cases and deaths every year, with perennial transmission in two peaks, before (March–May) and after the monsoon (September–November). There is no evidence of a systematic decrease in the number of reported cases between 2001 and 2008, and most reported cases are unconfirmed. Of those that are confirmed, more than 70% are due to *P. falciparum*. A total of 154 malaria deaths were reported in 2008, fewer than had been reported in the previous 8 years. Although IRS is the principal mosquito control method, applied selectively in high-risk areas, no data were made available by the programme. The programme delivered nearly 1.9 million ITNs in 2008, of which two thirds were LLINs. The programme adopted ACT as first-line treatment for malaria in 2004 and delivered 225 270 full treatment courses in 2008, enough to treat all confirmed cases. Total financing for malaria in 2008 was approximately US\$ 11 million, the main sources being the Government (US\$ 528 000), the Global Fund (US\$ 9.6 million), the World Bank (US\$ 700 000) and WHO (US\$ 220 000).

I. EPIDEMIOLOGICAL PROFILE

Population, endemicity and malaria burden

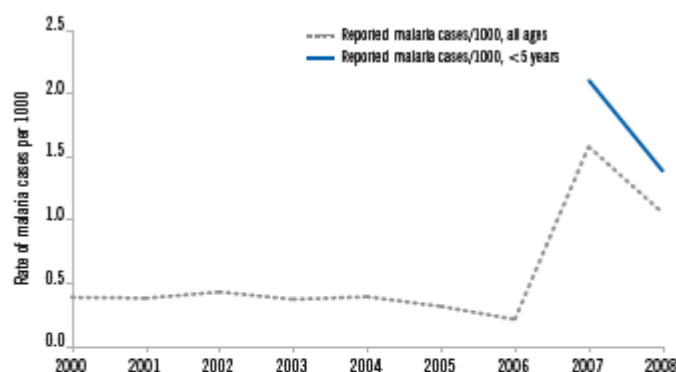
Population (in thousands)	2008	%
All age groups	160 000	
< 5 years	16 710	10
≥ 5 years	143 290	90
Population by malaria endemicity (in thousands)		
High transmission ≥ 1/1000	11 649	7
Low transmission (0–1/1000)	42 150	26
Malaria-free (0 cases)	106 201	66
Rural population	116 688	73
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>dirus, minimus, philippinensis, sondaicus</i>	
<i>Plasmodium</i> species	<i>falciparum, vivax</i>	

Stratification of burden (reported cases, per 1000)

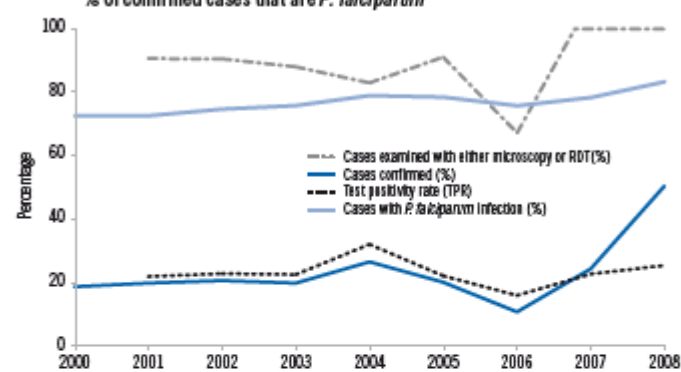


Trends in malaria morbidity and mortality

Reported malaria cases, per 1000



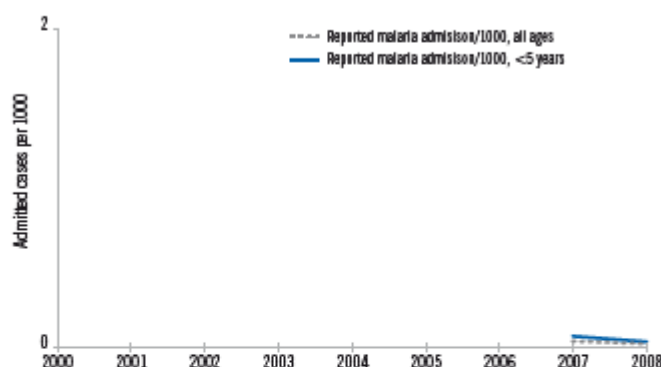
Rate of examination, case confirmation, malaria test positivity, % of confirmed cases that are *P. falciparum*



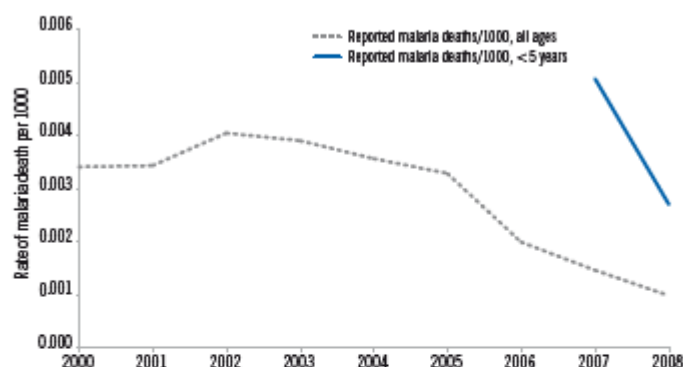
Year	Reported malaria cases, all ages	Reported malaria cases, < 5 years	All-cause outpatient consultations, all ages	All-cause outpatient consultations, < 5 years	Examined	Positive	<i>P. falciparum</i>	Reporting completeness of outpatient health facilities (%)	Reporting completeness of districts (%)
2000	320 011					54 223	39 272		
2001	2 776 477				250 258	54 216	39 274		
2002	2 543 782				275 987	62 269	46 418		
2003	2 554 223				245 258	54 654	41 356		
2004	3 016 262				185 215	58 894	46 402		
2005	1 445 831				220 025	48 121	37 679		
2006	1 320 581				209 991	32 857	24 828		
2007	1 140 424	35 698			270 137	59 857	46 803	100*	100*
2008	1 275 192	23 450			442 506	84 590	70 331	100*	100*

* : This information relates to 13 high endemic districts contributing about 95% of total malaria in the country.

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					478					
2001					490					
2002					588					
2003					577					
2004					535					
2005					501					
2006					307					
2007	5 678	1 173			228	86			100*	100*
2008	3 042	570			154	45			100*	100*

*: This information relates to 13 high endemic districts contributing about 98% of total malaria in the country

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	2008	Distribution – Antenatal care	No –
	Targeting all age groups	Yes	2000	Distribution – EPI routine and campaign	No –
				Targeting children < 5 years and pregnant women	Yes 2000
				ITN distribution is subsidized	No –
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 2000
				IRS is used for prevention and control of epidemics	Yes 2000
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	No	–		
Case management	Oral artemisinin monotherapies banned (prohibited from registration or removed from the system)	Yes	2004	Parasitological confirmation for patients ≥ 5 years only	No –
	Parasitological confirmation for patients of all ages	Yes	2009	Malaria diagnosis is free of charge in the public sector	Yes 2000
	ACT is free of charge for < 5 years old in the public sector	Yes	2004	ACT is free of charge for patients ≥ 5 years in the public sector	Yes 2004
	Diagnosis of malaria of inpatients is based on parasitological confirmation	Yes	2000	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	No	–	Uncomplicated malaria cases are admitted	No –
	Oversight regulation of case management in the private sectors	No	–		
	RDTs used at community level	Yes	2008		

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)	CQ+PQ	2004							
First-line treatment of <i>P. falciparum</i> (confirmed)	AL	2004	2003–2007	2	0.45	0	0.899	0	0.899
Treatment failure of <i>P. falciparum</i>	QN+D, QN+T, QN+T or D	2004							
Treatment of severe malaria	AM, QN	2004							
Treatment of <i>P. vivax</i>	CQ+PQ(14d)	2004							

III. IMPLEMENTING MALARIA CONTROL

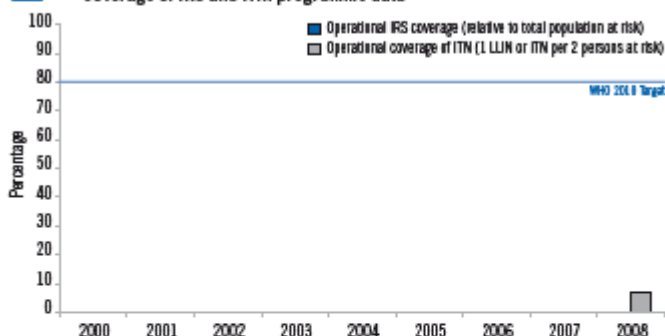
Coverage of ITN: survey data

No data

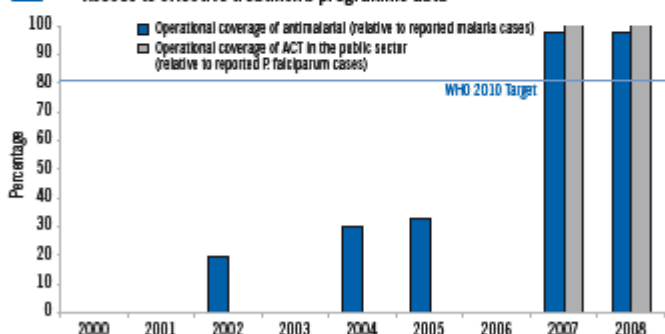
Access by febrile children to effective treatment: survey data

No data

Coverage of IRS and ITN: programme data



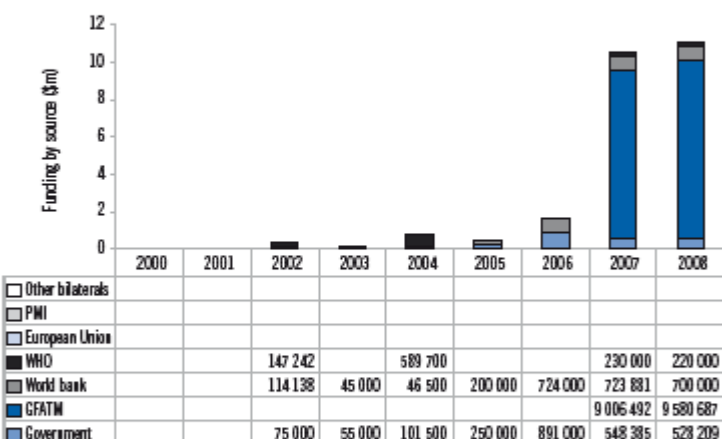
Access to effective treatment: programme data



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									
2002								60 000	
2003									
2004								66 615	
2005								78 401	
2006							2 200		
2007								241 398	114 990
2008							1 863 940	164 394	225 270

IV. FINANCING MALARIA CONTROL

Governmental and external financing



Breakdown of expenditure by intervention in 2008

No data

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)	No surveys
Treatment	No surveys
Use of health services	DHS 2004

BRAZIL

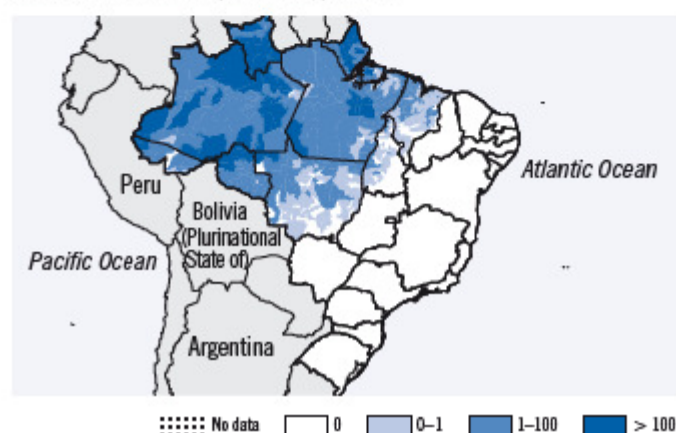
Transmission occurs mainly in the Amazon region, where 10–15% of the population is at risk, accounting for 60% of reported cases. Brazil accounts for over half the total estimated number of cases in the Region of the Americas. The number of reported cases rose from 388 303 in 2001 to 606 067 in 2005 but decreased to 315 642 in 2008. All reported malaria cases are laboratory confirmed, and approximately 15% of cases in 2008 were due to *P. falciparum*. Although IRS is the principal method of mosquito control, applied in high-risk areas, national data were not made available. Only a limited number of ITNs (10 000) were delivered in 2008. The supply of first-line antimalarial drugs is apparently sufficient to treat all reported cases, and 45 717 ACT doses were distributed in 2008, adequate to treat all *P. falciparum* cases. Funding for malaria control increased to more than US\$ 106 million in 2008, provided almost exclusively by the Government.

I. EPIDEMIOLOGICAL PROFILE

Population, endemicity and malaria burden

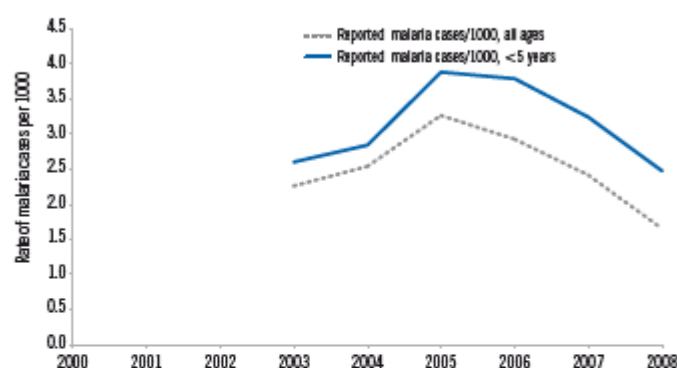
Population (in thousands)	2008	%
All age groups	191 972	
< 5 years	16 125	8
≥ 5 years	175 846	92
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	9 262	5
Low transmission (0–1/1000)	7 577	4
Malaria-free (0 cases)	175 133	91
Rural population	27 475	14
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>albimanus</i> , <i>albivittatus</i> , <i>darlingi</i> , <i>numeztovari</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

Stratification of burden (reported cases, per 1000)

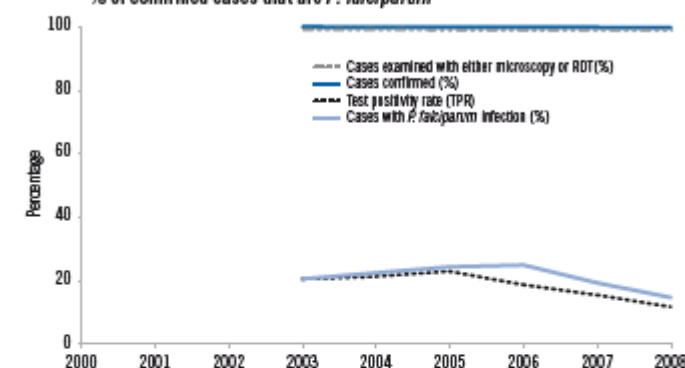


Trends in malaria morbidity and mortality

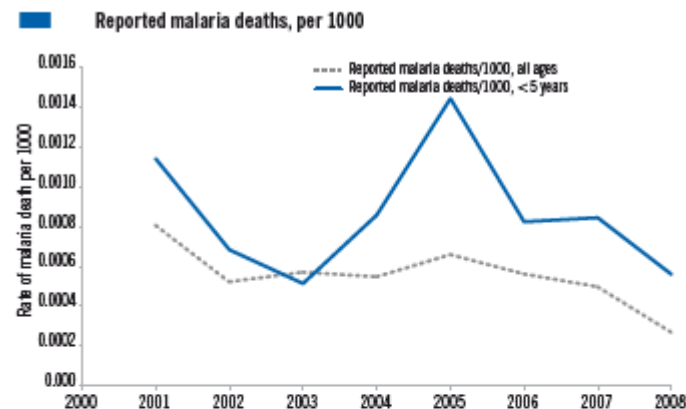
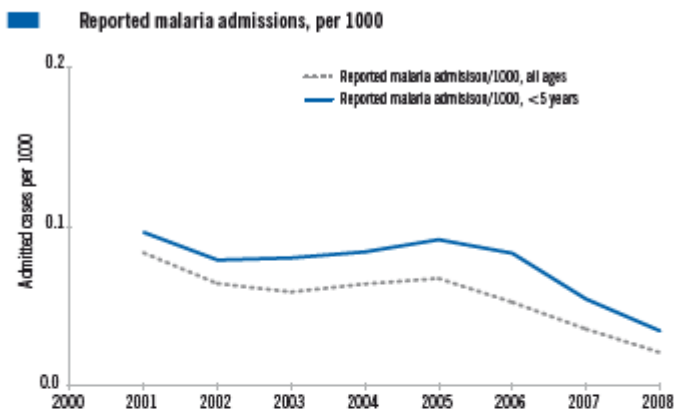
Reported malaria cases, per 1000



Rate of examination, case confirmation, malaria test positivity, % of confirmed cases that are *P. falciparum*



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									
2001									
2002									
2003	408 765	45 704	1969 314 789		2 008 764	408 765	83 765		
2004	464 901	49 688	1997 751 427		2 194 780	464 901	104 376		
2005	606 067	67 180	2192 807 385		2 660 539	606 067	147 150		
2006	549 469	64 358	2404 857 167		2 959 489	549 469	136 868		
2007	458 041	53 718	2699 038 287		2 983 553	458 041	88 249		
2008	315 642	39 826	2935 995 890		2 721 017	315 642	46 289		



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										
2001	14 751	1 692	11 756 354	1 677 166	142	20	961 492	72 873		
2002	11 500	1 393	11 713 749	1 617 603	93	12	982 807	69 093		
2003	10 690	1 417	11 638 194	1 596 365	103	9	1 002 340	67 846		
2004	11 762	1 475	11 492 883	1 511 211	100	15	1 024 073	63 651		
2005	12 542	1 592	11 429 133	1 466 098	122	25	1 006 827	60 247		
2006	9 884	1 418	11 338 039	1 427 675	105	14	1 031 691	56 855		
2007	6 772	907	11 330 096	1 360 752	94	14	1 040 416	52 915		
2008	4 039	559	10 722 568	1 258 796	51	9	903 573	42 613		

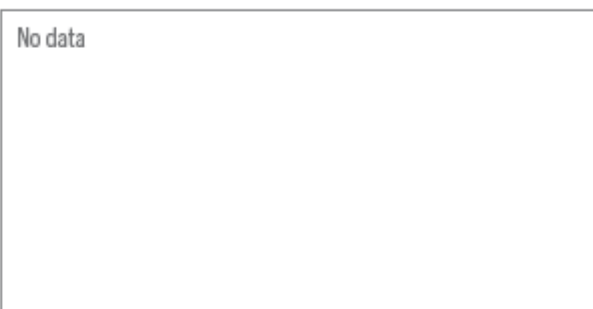
II. INTERVENTION POLICIES AND STRATEGIES

Intervention	WHO-RECOMMENDED 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	2007	Distribution – Antenatal care	No	–
	Targeting all age groups	Yes	2007	Distribution – EPI routine and campaign	No	–
				Targeting children < 5 years and pregnant women	No	–
				ITN distribution is subsidized	No	–
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	Yes	1958	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	–
				IRS is used for prevention and control of epidemics	Yes	–
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	No	–			
Case management	Oral artemisinin monotherapies banned (prohibited from registration or removed from the system)	Yes	2007	Parasitological confirmation for patients ≥ 5 years only	No	–
	Parasitological confirmation for patients of all ages	Yes	1972	Malaria diagnosis is free of charge in the public sector	Yes	1972
	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	1972	ACT is delivered at community level through community agents (beyond the health facilities)	Yes	2006
	Pre-referral treatment with quinine or artemether IM or artesunate suppositories	No	–	Uncomplicated malaria cases are admitted	Yes	–
	Oversight regulation of case management in the private sectors	No	–			
	RDTs used at community level	Yes	2007			

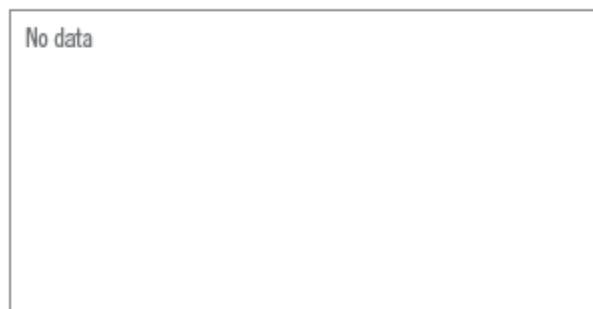
Antimalarial policy	Type of medicine	Year adopted	Results of therapeutic efficacy tests					
			Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25% 75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	–	–						
First-line treatment of <i>P. falciparum</i> (confirmed)	AL or AS+MQ	2006						
Treatment failure of <i>P. falciparum</i>	–	–						
Treatment of severe malaria	QN, AM, AS	2006						
Treatment of <i>P. vivax</i>	CQ+PQ(7d)	2006						

III. IMPLEMENTING MALARIA CONTROL

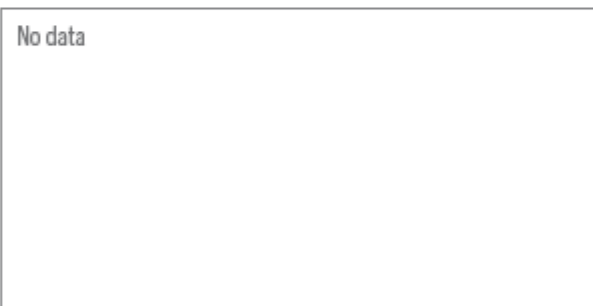
Coverage of ITN: survey data



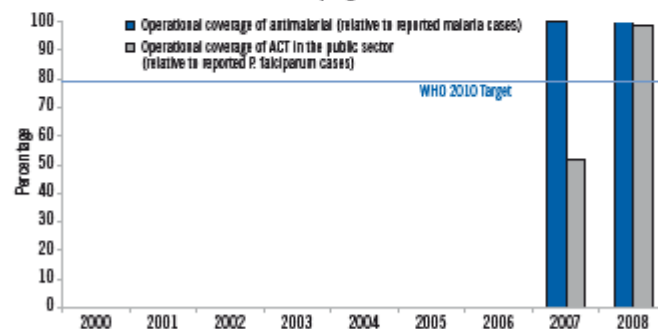
Coverage of IRS and ITN: programme data



Access by febrile children to effective treatment: survey data



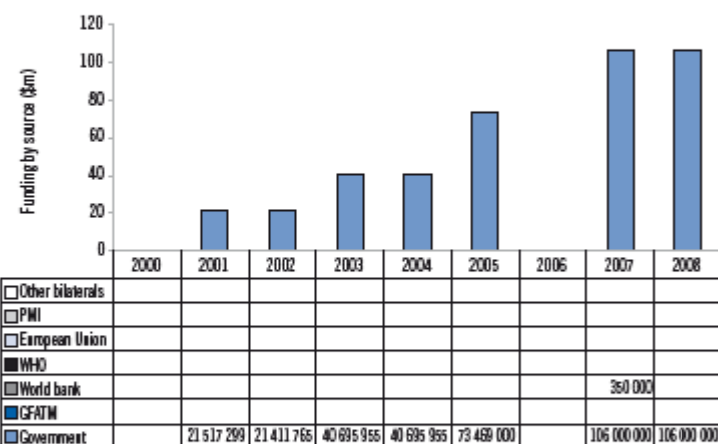
Access to effective treatment: programme data



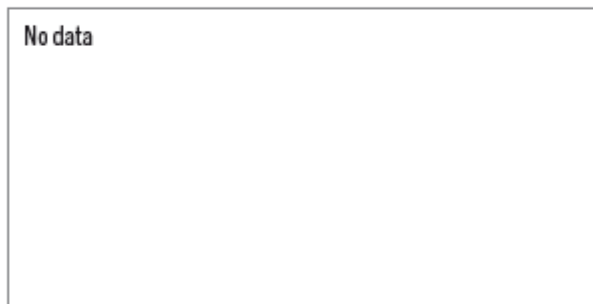
Year	Pregnant women who slept under any net (%)	Pregnant women who slept under an ITN (%)	Children < 5 years with fever (%)	Febrile children < 5 years who sought treatment in HF (%)	Number of households protected by IRS	Number of people protected by IRS	Number of ITNs and/or LLINs	Number of 1st-line treatment courses received	Number of ACT treatment courses received
2000									
2001									
2002									
2003									
2004									
2005									
2006									
2007							10 000	459 513	45 918
2008								347 086	45 717

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)	No surveys
Treatment	No surveys
Use of health services	DHS 1996

BURKINA FASO

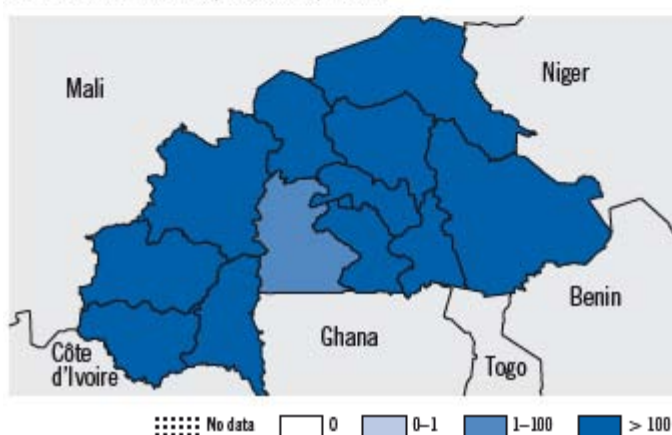
Malaria is more intense in the southern third of the country, occurring seasonally between December and April. Almost all cases are caused by *P. falciparum*. Only about 5% of suspected cases are parasitologically tested. The numbers of reported cases and deaths have increased consistently in recent years, but it is not known if this reflects a real increase in malaria burden or improved reporting. The national malaria programme distributed approximately 1 160 747 LLINs during 2006–2008, far below the number needed to protect the 14 million people at risk. IRS is not a national policy. The national malaria control programme reported delivery of about 2.4 million ACT treatment courses in 2008, enough to cover 63% of 3.8 million suspected malaria cases in need of treatment. Funding increased from US\$ 3 million in 2004 to over US\$ 116 million in 2008, financed mainly by the Global Fund, United Nations agencies and a limited Government budget.

I. EPIDEMIOLOGICAL PROFILE

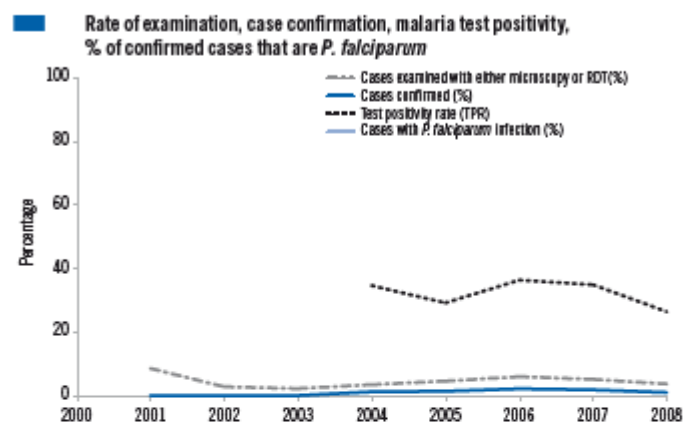
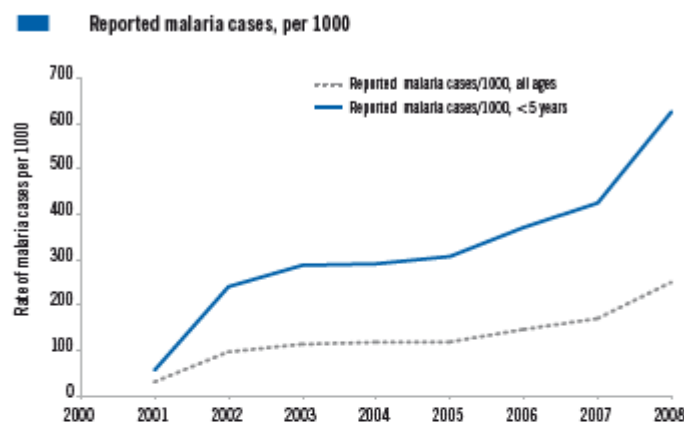
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	15 234	
< 5 years	2 934	19
≥ 5 years	12 300	81
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	15 234	100
Low transmission (0–1/1000)	0	0
Malaria-free (0 cases)	0	0
Rural population	12 257	80
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>gambiae</i> , <i>arabiensis</i> , <i>funestus</i> , <i>brochieri</i> , <i>coustani</i> , <i>flavicosta</i> , <i>hancocki</i> , <i>nil</i> , <i>paludis</i> , <i>pharoensis</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

Stratification of burden (reported cases, per 1000)

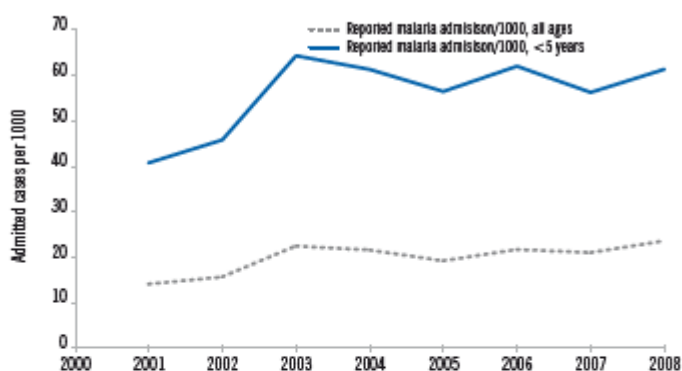


Trends in malaria morbidity and mortality

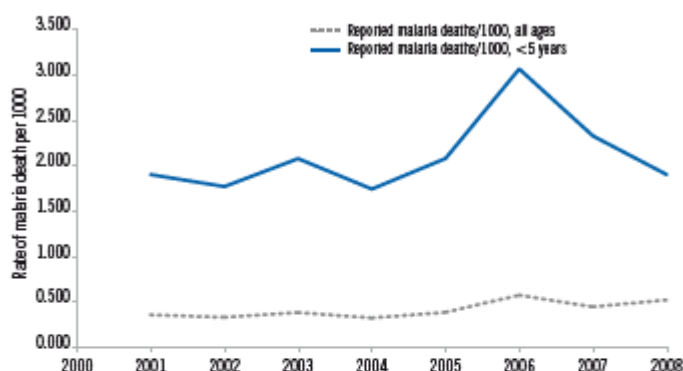


Year	Reported malaria cases, all ages	Reported malaria cases, < 5 years	All-cause outpatient consultations, all ages	All-cause outpatient consultations, < 5 years	Examined	Positive	<i>P. falciparum</i>	Reporting completeness of outpatient health facilities (%)	Reporting completeness of districts (%)
2000									
2001	352 587	124 403	2 604 791	1 071 939	30 006				
2002	1 188 870	546 940	3 753 393	1 519 812	32 796				
2003	1 443 184	671 643	4 402 278	1 810 555	31 256				
2004	1 546 644	701 935	4 462 249	1 791 775	52 874	18 256			
2005	1 615 695	770 986	5 346 113	2 035 035	73 262	21 335			
2006	2 060 867	977 988	5 307 006	2 366 588	122 047	44 265		33	100
2007	2 487 633	1 180 926	6 108 633	2 336 670	127 120	44 246		33	100
2008	3 790 238	1 834 699	7 533 885	2 972 878	138 414	36 514		33	100

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										
2001	167 654	90 531	218 215		4 233	4 233	13 120	6 388		
2002	192 587	104 298			4 032	4 032	10 357	4 400		
2003	286 464	150 373			4 860	4 860	14 454	7 445		
2004	284 578	148 024			4 205	4 205	14 726	7 139		
2005	261 927	141 839			5 224	5 224	13 932	7 412		
2006	306 392	163 451			8 083	8 083	15 563	8 968		
2007	306 747	156 287	627 070		6 472	6 472	10 193			
2008	356 989	179 799	571 954	872 615	7 834	5 576	19 438	9 299		

II. INTERVENTION POLICIES AND STRATEGIES

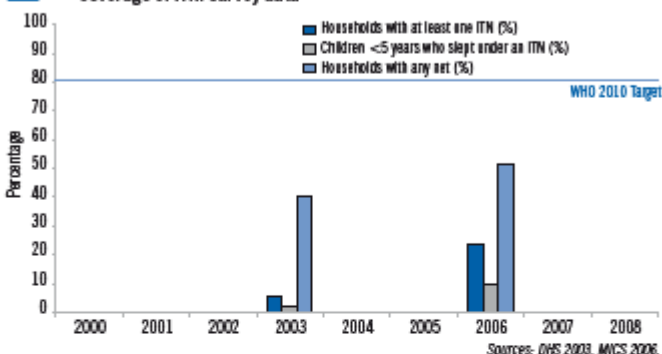
Intervention	WHO-RECOMMENDED POLICIES / STRATEGIES	Yes or No	Year adopted	OPTIONAL POLICIES / STRATEGIES	
				Yes or No	Year adopted
Insecticide-treated nets (ITN)	Distribution of ITN/LLINs – Free	Yes	2007	Distribution – Antenatal care	Yes 2005
	Targeting all age groups	Yes	1998	Distribution – EPI routine and campaign	Yes 2005
				Targeting children < 5 years and pregnant women	Yes 2004
				ITN distribution is subsidized	Yes 2005
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	No	–	Insecticide-resistance management implemented	Yes 1998
	DDT is used for IRS (public health) only	No	–	Where IRS is conducted, other options are also implemented, e.g. ITN	No –
				IRS is used for prevention and control of epidemics	No –
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	Yes	2005		
Case management	Oral artemisinin monotherapies banned (prohibited from registration or removed from the system)	Yes	2008	Parasitological confirmation for patients ≥ 5 years only	No –
	Parasitological confirmation for patients of all ages	Yes	1998	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)	No –
	Pre-referral treatment with quinine or artemether IM or artesunate suppositories	Yes	2005	Uncomplicated malaria cases are admitted	No –
	Oversight regulation of case management in the private sectors	No	–		
	RDIs used at community level	No	–		

Results of therapeutic efficacy tests

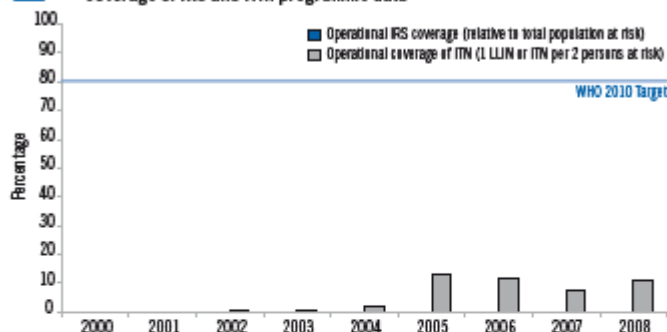
Antimalarial policy	Type of medicine	Year adopted	Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AL, AS + AQ	–	2005–2007	3	3.4	1.9	12.3	1.9	12.3
First-line treatment of <i>P. falciparum</i> (confirmed)	AL, AS + AQ	–							
Treatment failure of <i>P. falciparum</i>	QN(7d)	–							
Treatment of severe malaria	QN(7d)	–							
Treatment of <i>P. vivax</i>	–	–							

III. IMPLEMENTING MALARIA CONTROL

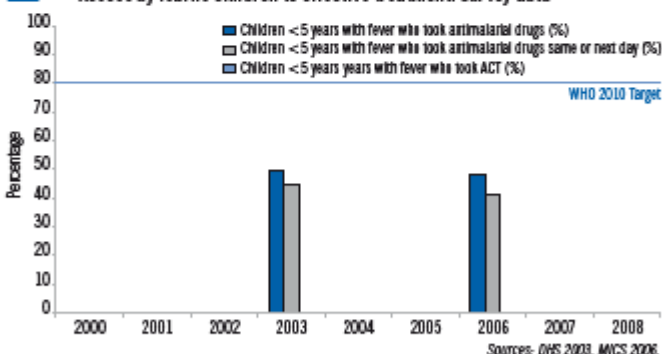
Coverage of ITN: survey data



Coverage of IRS and ITN: programme data



Access by febrile children to effective treatment: survey data



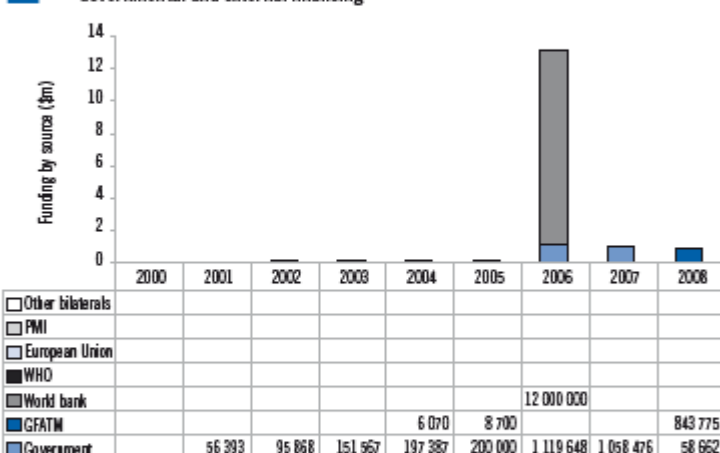
Access to effective treatment: programme data



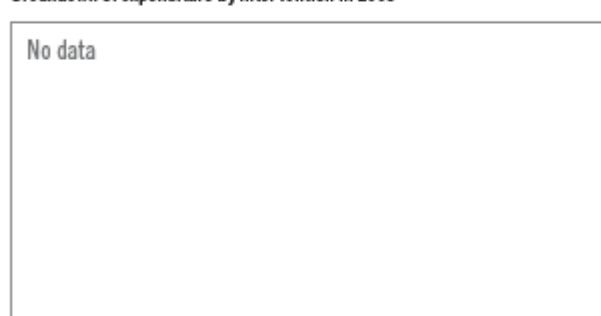
Year	Pregnant women who slept under any net (%)	Pregnant women who slept under an ITN (%)	Children < 5 years with fever (%)	Febrile children < 5 years who sought treatment in HF (%)	Number of households protected by IRS	Number of people protected by IRS	Number of ITNs and/or LLINs	Number of 1st-line treatment courses received	Number of ACT treatment courses received
2000									
2001							5 396	3 643 062	
2002							28 252	5 621 064	
2003	24	3	—	—			41 515	6 084 223	
2004							125 000	5 191 738	
2005							903 000	4 167 908	
2006			—	—			412 200	3 930 296	
2007							24 000	4 981 270	811 507
2008							724 547	2 408 905	2 408 905

IV. FINANCING MALARIA CONTROL

Governmental and external financing



Breakdown of expenditure by intervention in 2008



V. SOURCE OF INFORMATION

PROGRAMME DATA

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

Surveillance data
Programme report
Programme report

SURVEY AND OTHER DATA

Insecticide-treated nets (ITN)	DHS 2003, MICS 2006
Treatment	DHS 2003, MICS 2006
Use of health services	DHS 2003

CAMBODIA

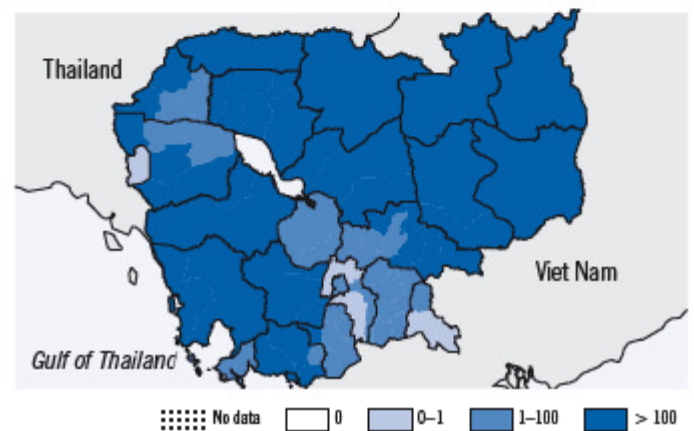
Approximately 2 million people live in or around forested areas where there is intense malaria transmission. Soldiers, forestry workers and gem miners are at the highest risk. Between 2001 and 2008, the number of reported cases detected in Cambodia fell from 121 612 to 80 644, and the number of reported malaria deaths decreased from 476 to 209. The 2005 demographic and health survey showed that more than 88% of children slept under a mosquito net but less than 5% slept under an ITN. The programme delivered 742 000 ITNs in 2008 (of which 214 973 were LLINs), sufficient to cover 10% of the population living at any risk for malaria, assuming two persons sleeping under each net. Under national treatment policy, artesunate and mefloquine are distributed together in blister packs through the public and private sectors, although resistance to these drugs has been recorded on the Cambodia–Thailand border. National policy promotes the use of RDTs, so that antimalarial treatment is targeted to confirmed cases only. Funding for malaria control appears to have increased appreciably since 2000, with support from the Global Fund in 2007 exceeding US\$ 10 million.

I. EPIDEMIOLOGICAL PROFILE

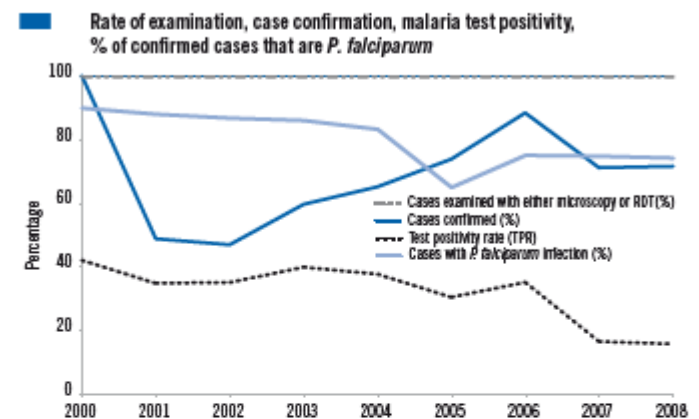
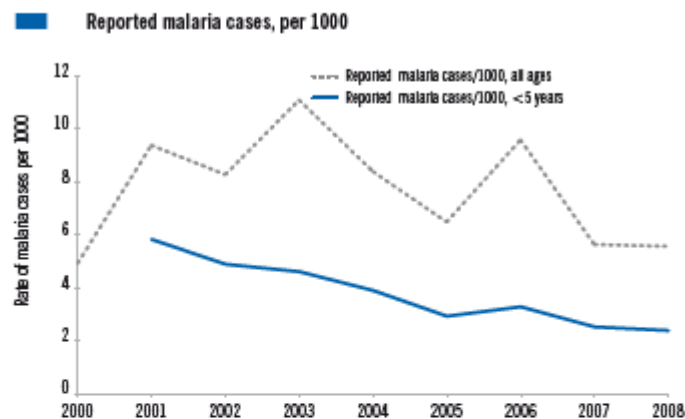
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	14 562	
< 5 years	1 611	11
≥ 5 years	12 951	89
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	6 393	44
Low transmission (0–1/1000)	1 369	9
Malaria-free (0 cases)	6 800	47
Rural population	11 425	78
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>minimus</i> , <i>dirus</i> , <i>sendaicus</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

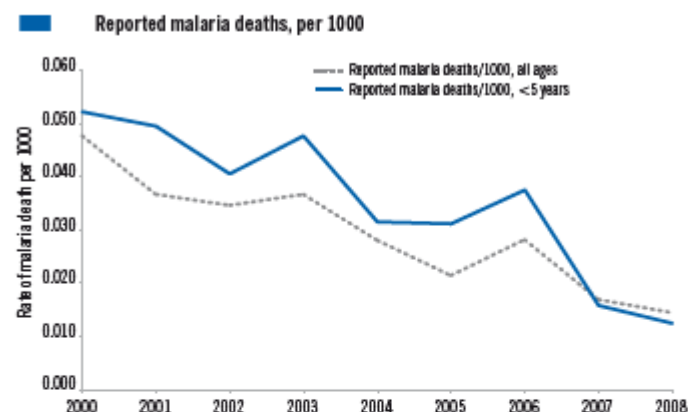
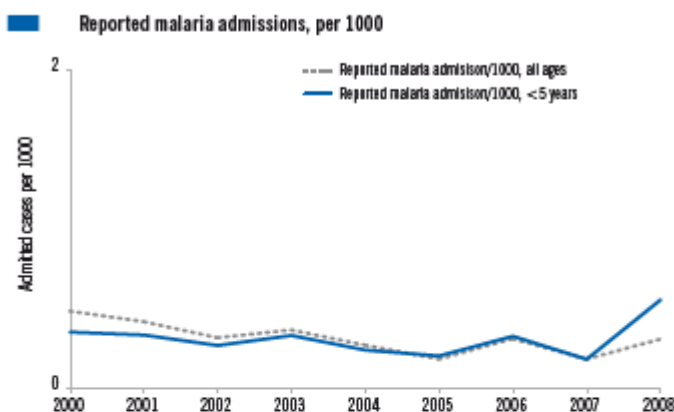
Stratification of burden (reported cases, per 1000)



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	62 442				140 722	62 442	46 150		
2001	121 612	9 854			145 619	53 601	37 105		
2002	109 048	8 057	4 200 432	689 728	133 921	46 902	33 010		
2003	148 743	7 415	4 514 158	747 870	160 354	71 265	36 338		
2004	114 211	6 163	5 302 431	988 026	150 952	59 745	31 129		
2005	89 558	4 566	5 976 718	1 201 908	147 782	49 436	17 482		
2006	134 795	5 135	6 813 409	1 466 784	197 050	78 696	24 779		
2007	80 285	3 965	6 106 629		182 720	42 518	16 518		
2008	80 664	3 811	5 962 415	1 216 139	130 995	42 124	15 095	100	100



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	6 207	621			608	91				
2001	5 453	573	283 140	83 669	476	84	6 459			
2002	4 214	450	250 314	61 415	457	67	6 222	625		
2003	4 936	542	305 654	94 447	492	77	5 215	649		
2004	3 719	387	314 627	96 039	382	50	4 958	622		
2005	2 560	325	287 151	77 639	296	49	4 738	736		
2006	4 392	519	388 890	97 773	396	59	7 008	765		
2007	2 648	295	204 681	41 454	241	25	3 486	683		
2008	4 513	900	234 307	27 489	209	20	3 667	701	100	100

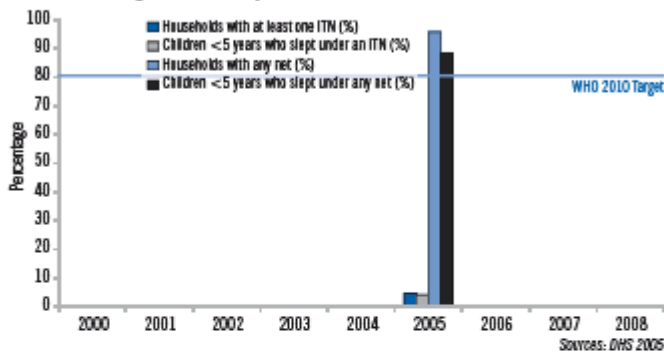
II. INTERVENTION POLICIES AND STRATEGIES

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	2000	Distribution – Antenatal care	Yes	2006
	Targeting all age groups	Yes	2000	Distribution – EPI routine and campaign	No	–
				Targeting children < 5 years and pregnant women	Yes	2000
				ITN distribution is subsidized	No	–
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	No	–
				IRS is used for prevention and control of epidemics	No	–
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	No	–			
Case management	Oral artemisin in monotherapies banned (prohibited from registration or removed from the system)	Yes	2008	Parasitological confirmation for patients ≥ 5 years only	–	–
	Parasitological confirmation for patients of all ages	Yes	2000	Malaria diagnosis is free of charge in the public sector	Yes	–
	ACT is free of charge for < 5 years old in the public sector	Yes	2000	ACT is free of charge for patients ≥ 5 years in the public sector	Yes	2000
	Diagnosis of malaria of inpatients is based on parasitological confirmation	Yes	–	ACT is delivered at community level through community agents (beyond the health facilities)	Yes	2002
	Pre-referral treatment with quinine or artemether IM or artesunate suppositories	Yes	2000	Uncomplicated malaria cases are admitted	Yes	–
	Oversight regulation of case management in the private sectors	–	–			
	RDTs used at community level	Yes	2002			

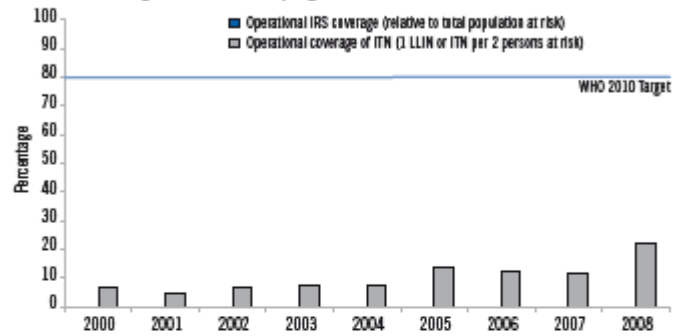
Antimalarial policy	Type of medicine	Year adopted	Results of therapeutic efficacy tests					
			Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25% 75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AS+MQ	2000	2001–2008	26	2.3499	0	14.3	0 7.55
First-line treatment of <i>P. falciparum</i> (confirmed)	AS+MQ	2000						
Treatment failure of <i>P. falciparum</i>	QN(7d) + T(7d)	2000						
Treatment of severe malaria	AM+MQ	2000						
Treatment of <i>P. vivax</i>	CQ	2000						

III. IMPLEMENTING MALARIA CONTROL

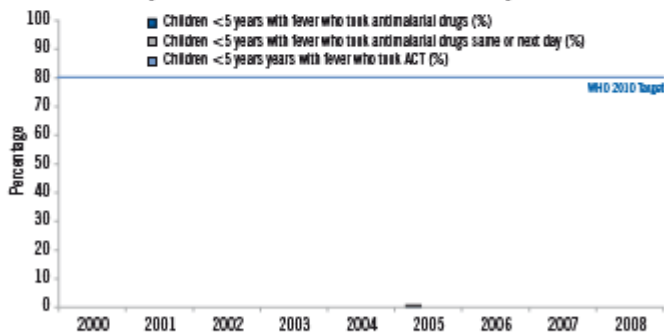
Coverage of ITN: survey data



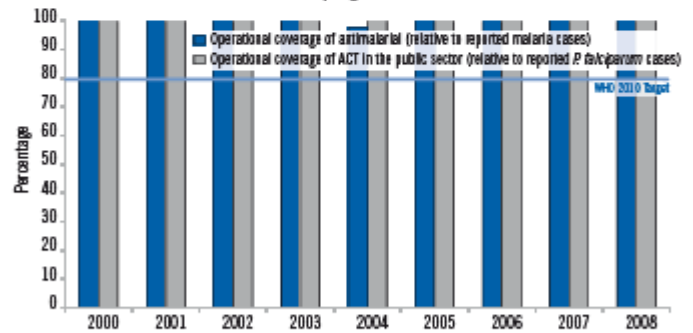
Coverage of IRS and ITN: programme data



Access by febrile children to effective treatment: survey data



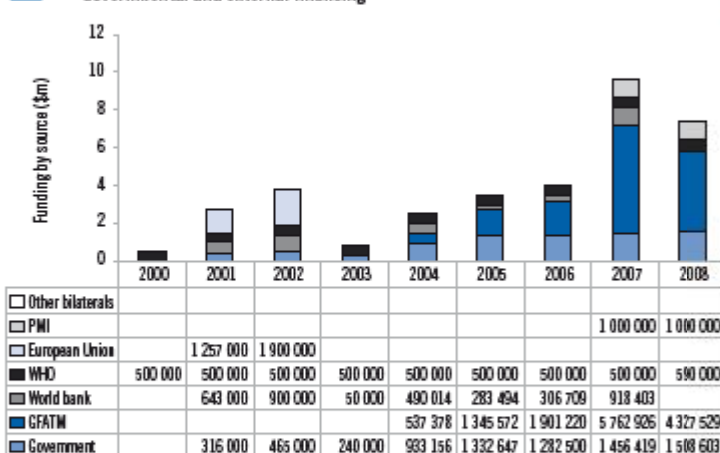
Access to effective treatment: programme data



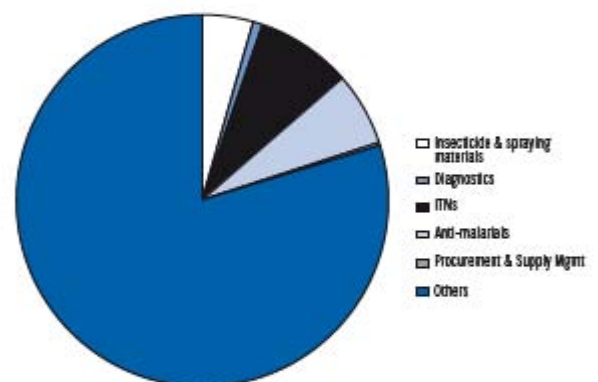
Year	Pregnant women who slept under any net (%)	Pregnant women who slept under an ITN (%)	Children < 5 years with fever (%)	Febrile children < 5 years who sought treatment in HF (%)	Number of households protected by IRS	Number of people protected by IRS	Number of ITNs and/or LLINs	Number of 1st-line treatment courses received	Number of ACT treatment courses received
2000							224 568	216 720	159 987
2001							163 412	127 258	75 678
2002							246 836	169 784	116 184
2003							269 490	127 982	127 382
2004							267 144	89 993	84 421
2005	86	4	-	-			500 318	77 782	75 082
2006							452 316	141 535	112 495
2007							456 581	91 839	150 819
2008							742 748	110 001	81 090

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 2005
Treatment	DHS 2005
Use of health services	DHS 2005

CAMEROON

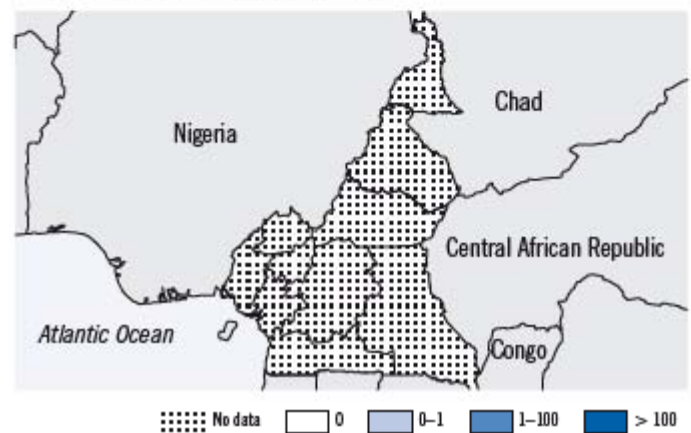
Cameroon had an estimated 5.6 million malaria cases in 2006. Transmission occurs all year round but is more intense in the south. The number of reported malaria cases jumped from 635 000 in 2006 to nearly 1 650 749 cases in 2008, none of which were confirmed. Similarly, the numbers of malaria inpatient cases and deaths increased six- and fourfold, respectively, perhaps due to improving reporting. The national malaria control programme delivered about 800 000 LLINs in 2008, inadequate to cover the 19.5 million people at risk. The programme delivered 2.56 million ACT treatment courses in 2007 and 1.81 million in 2008, adequate to treat the reported malaria cases in the public sector. In the 2006 multiple indicator cluster survey, 20% of households owned an ITN, only 13% of children slept under an ITN and only 2% of children with fever received an ACT. Funding for malaria control increased from less than US\$ 2 million in 2002 to over US\$ 26 million in 2008, provided mostly by the Government and the Global Fund.

I. EPIDEMIOLOGICAL PROFILE

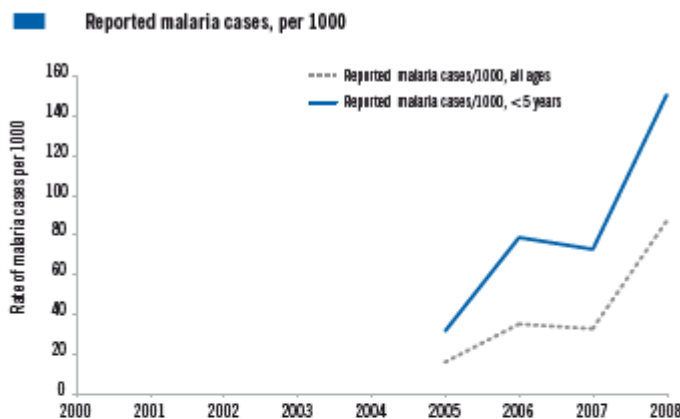
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	19 088	
< 5 years	3 016	16
≥ 5 years	16 072	84
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	13 537	71
Low transmission (0–1/1000)	5 552	29
Malaria-free (0 cases)	0	0
Rural population	8 248	43
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>gambiae</i> , <i>arabiensis</i> , <i>funestus</i> , <i>brochieri</i> , <i>coustani</i> , <i>flavicocta</i> , <i>hancocki</i> , <i>hargreavesi</i> , <i>melas</i> , <i>moucheti</i> , <i>nili</i> , <i>paludis</i> , <i>pharoensis</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

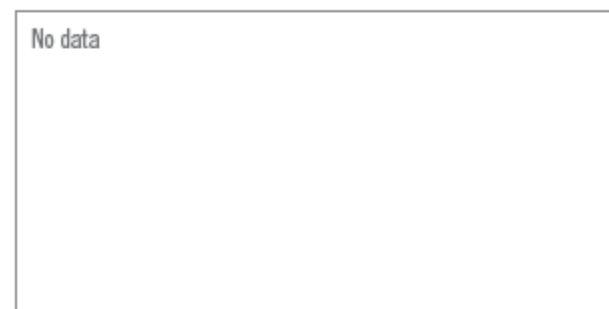
Stratification of burden (reported cases, per 1000)



Trends in malaria morbidity and mortality

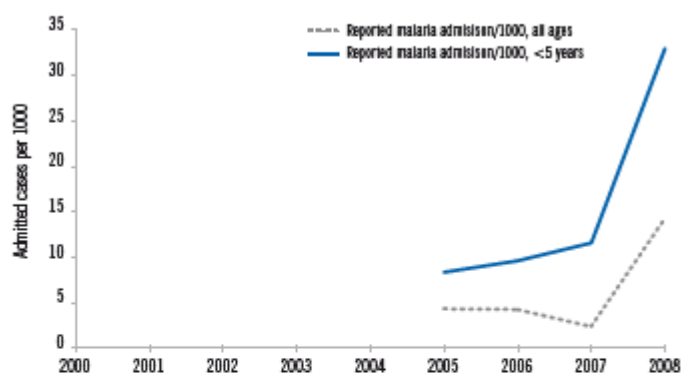


Rate of examination, case confirmation, malaria test positivity, % of confirmed cases that are *P. falciparum*

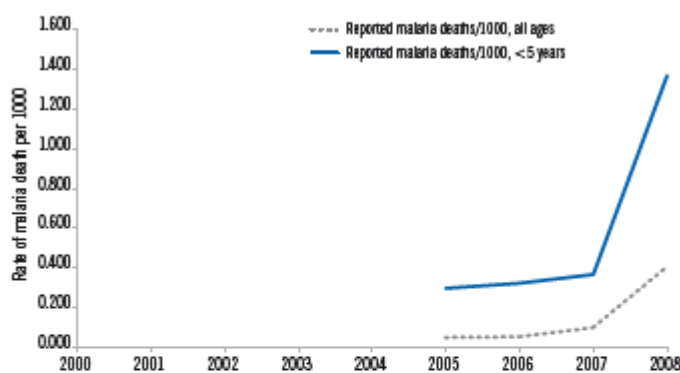


Year	Reported malaria cases, all ages	Reported malaria cases, < 5 years	All-cause outpatient consultations, all ages	All-cause outpatient consultations, < 5 years	Examined	Positive	<i>P. falciparum</i>	Reporting completeness of outpatient health facilities (%)	Reporting completeness of districts (%)
2000									
2001									
2002									
2003									
2004									
2005	277 413	89 041	697 665	197 771					
2006	634 507	227 284	1 748 905	462 140					
2007	604 153	214 697	1 668 116	464 190		313 083			
2008	1 650 749	453 811	4 064 854	1 149 790					

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										
2001										
2002										
2003										
2004										
2005	75 738	23 418	138 617	37 928	836	836	254 308	1 203		
2006	75 904	27 636	204 498	66 873	930	930	261 175			
2007	42 548	34 056	239 650	43 091	1 811	1 082	6 093	2 726		
2008	270 038	99 286	565 754	176 984	7 673	4 119	18 034	7 928		

II. INTERVENTION POLICIES AND STRATEGIES

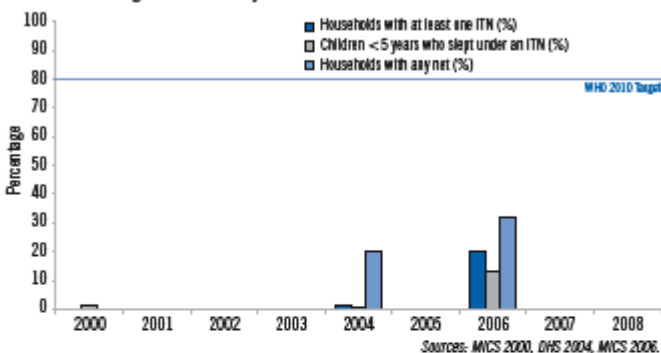
Intervention	WHO-RECOMMENDED POLICIES / STRATEGIES	Yes or No	Year adopted	OPTIONAL POLICIES / STRATEGIES	Yes or No	Year adopted
Insecticide-treated nets (ITN)	Distribution of ITN/LLINs – Free	Yes	2003	Distribution – Antenatal care	Yes	2003
	Targeting all age groups	No	–	Distribution – EPI routine and campaign	Yes	2007
				Targeting children < 5 years and pregnant women	Yes	2003
				ITN distribution is subsidized	Yes	2005
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	No	–	Insecticide-resistance management implemented	Yes	2005
	DDT is used for IRS (public health) only	No	–	Where IRS is conducted, other options are also implemented, e.g. ITN	No	–
				IRS is used for prevention and control of epidemics	No	–
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	Yes	2004			
Case management	Oral artemisinin monotherapies banned (prohibited from registration or removed from the system)	Yes	2007	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	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	Yes	–	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	–	Uncomplicated malaria cases are admitted	No	–
	Oversight regulation of case management in the private sectors	Yes	–			
	RDTs used at community level	No	–			

Results of therapeutic efficacy tests

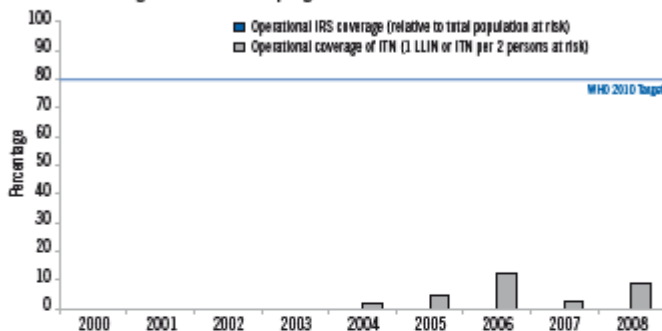
Antimalarial policy	Type of medicine	Year adopted	Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AS+AQ	2004							
First-line treatment of <i>P. falciparum</i> (confirmed)	AS+AQ	2004							
Treatment failure of <i>P. falciparum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

III. IMPLEMENTING MALARIA CONTROL

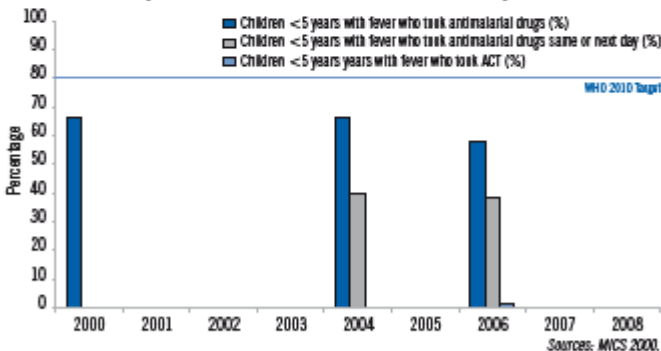
Coverage of ITN: survey data



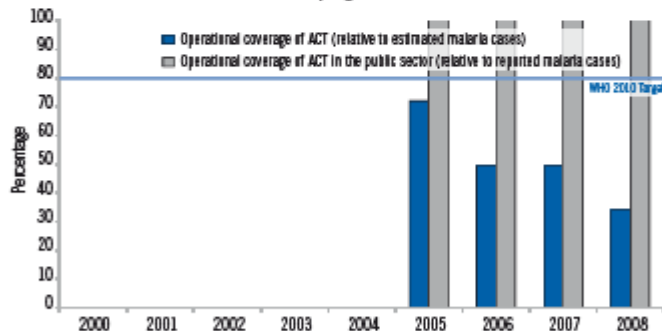
Coverage of IRS and ITN: programme data



Access by febrile children to effective treatment: survey data



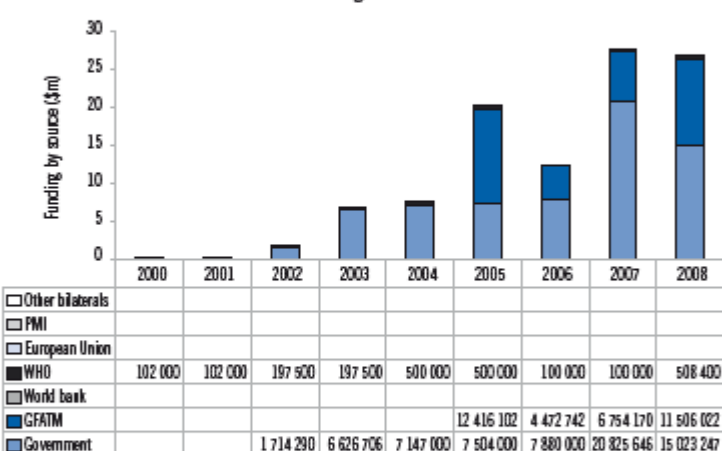
Access to effective treatment: programme data



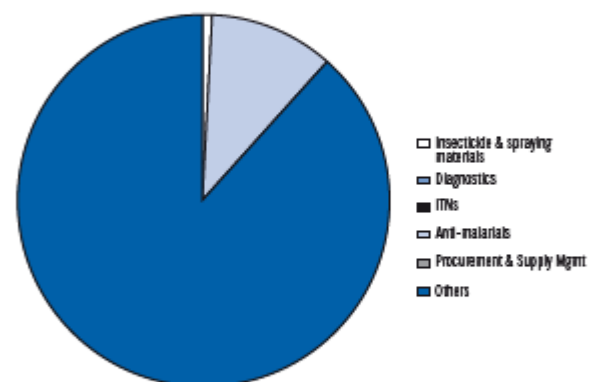
Year	Pregnant women who slept under any net (%)	Pregnant women who slept under an ITN (%)	Children < 5 years with fever (%)	Febrile children < 5 years who sought treatment in HF (%)	Number of households protected by IRS	Number of people protected by IRS	Number of ITNs and/or LLINs	Number of 1st-line treatment courses received	Number of ACT treatment courses received
2000			-	-					
2001									
2002									
2003									
2004	12	1	-	-			140 443		
2005							404 755	3 583 332	3 583 332
2006							1 097 510	2 518 305	2 518 305
2007							244 425	2 566 785	2 566 785
2008							802 105	1 814 725	1 814 725

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 2004, MICS 2006
Treatment	MICS 2000, DHS 2004, MICS 2006
Use of health services	DHS 2004

CHAD

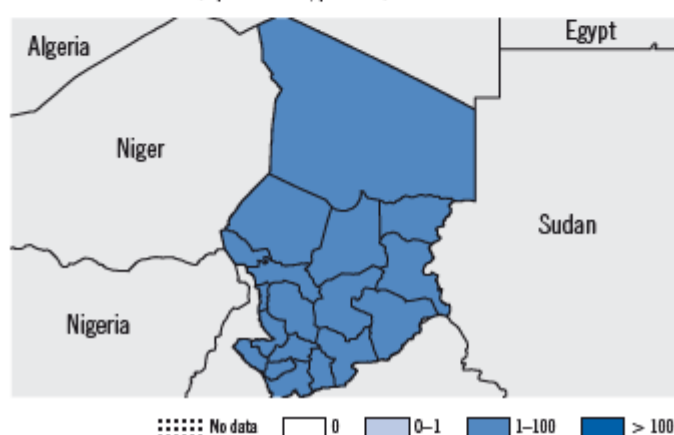
Malaria transmission is more intense in the south, occurring seasonally between May and December. Almost all cases are caused by *P. falciparum*. Less than 13% of suspected cases are parasitologically tested. The numbers of reported cases remained nearly the same and deaths have increased in recent years, but it is not known if this reflects a real increase in malaria burden or improved reporting. The national malaria programme did not implement major vector control, except for the distribution of 83 000 ITNs in 2007 and 120 000 in 2008, many fewer than are needed to protect the 10 million people at risk. IRS is not a national policy. The number of treatment courses of ACT used in 2006 was far fewer than the estimated number of cases. Malaria control has been funded mainly by the Government, United Nations agencies and bilateral agencies, with no active Global Fund grant.

I. EPIDEMIOLOGICAL PROFILE

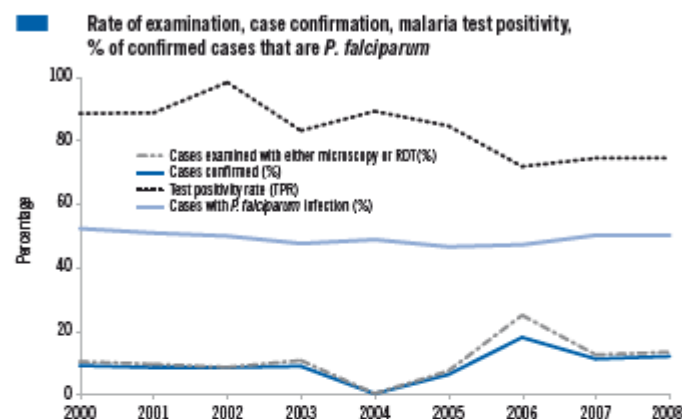
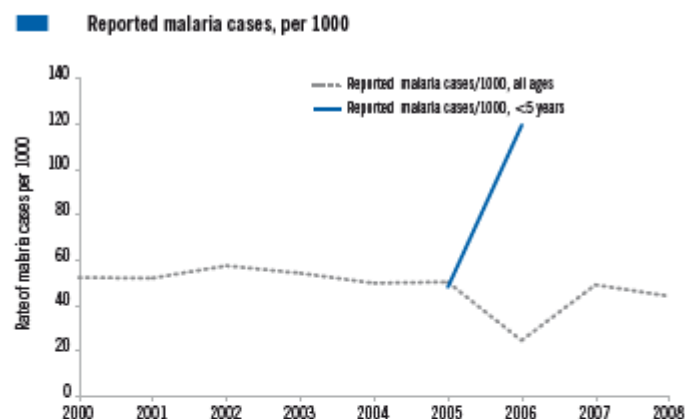
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	10 914	
< 5 years	1 985	18
≥ 5 years	8 928	82
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	8 731	80
Low transmission (0–1/1000)	2 073	19
Malaria-free (0 cases)	110	1
Rural population	8 009	73
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>arabiensis</i> , <i>funestus</i> , <i>arabiensis</i> , <i>coustani</i> , <i>coustani</i> , <i>funestus</i> , <i>nili</i> , <i>pharoensis</i> , <i>pharoensis</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

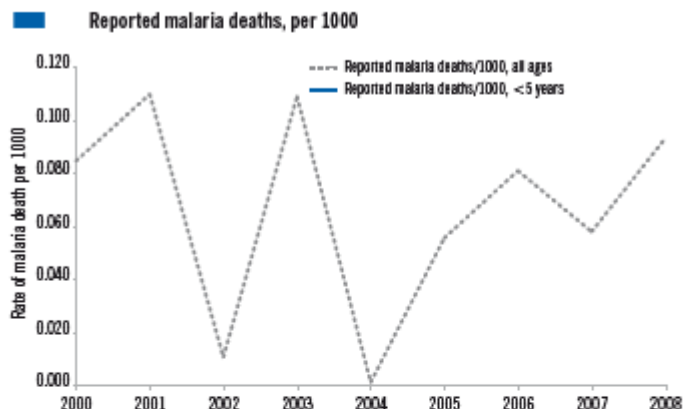
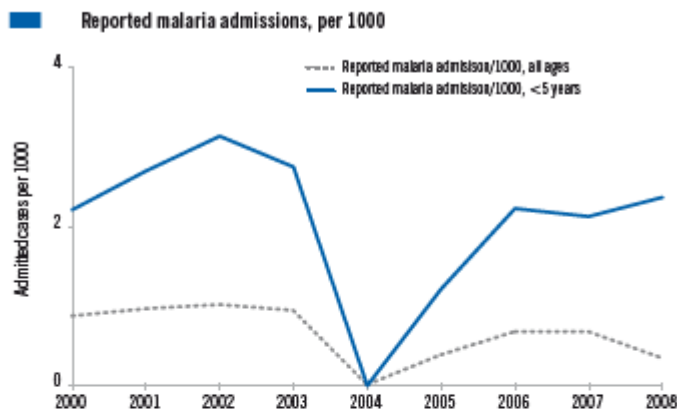
Stratification of burden (reported cases, per 1000)



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	437 041		2 040 156		45 283	40 078	20 977		52
2001	451 182		1 980 009		43 180	38 287	19 520		80
2002	517 004		2 084 846		44 689	43 933	21 959		62
2003	505 732		1 953 940		54 381	45 195	21 532		94
2004	481 122		2 002 670		1 525	1 360	665		100
2005	501 846	89 041	1 968 565	197 771	37 439	31 668	14 770		54
2006	251 354	227 284	1 938 177	462 140	62 895	45 155	21 354		83
2007	518 832		2 196 462		64 884	58 288	24 282		83
2008	478 987		2 159 832		64 171	57 644	24 015		90



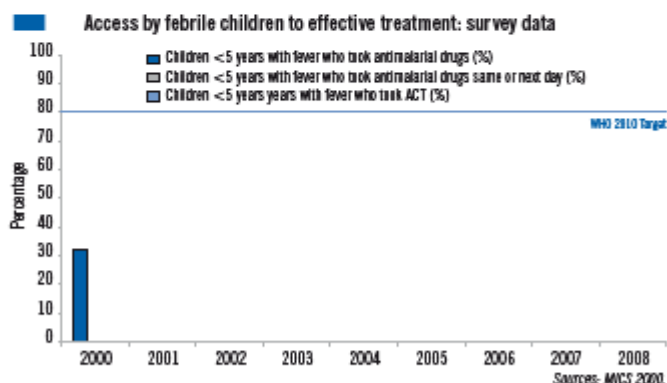
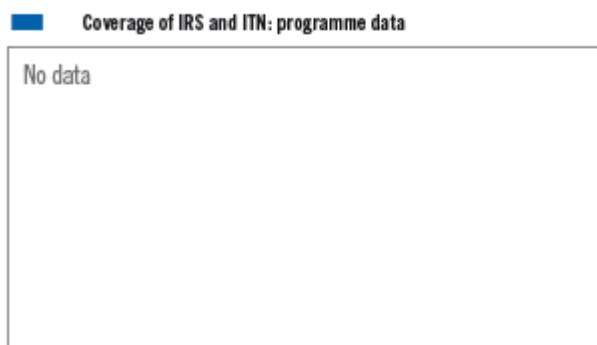
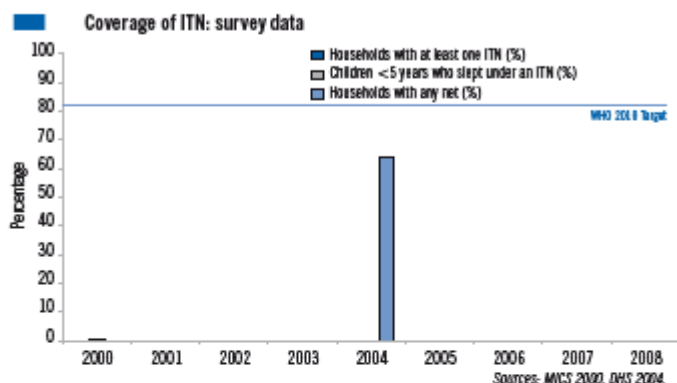
Year	Reported malaria admissions, all ages	Reported malaria admissions, < 5 years	All-cause admissions, all ages	All-cause admissions, < 5 years	Reported malaria deaths, all ages	Reported malaria deaths, < 5 years	All-cause deaths, all ages	All-cause deaths, < 5 years	Reporting completeness of inpatient health facilities (%)	Reporting completeness of districts (%)
2000	7 345	3 451	15 057	15 057	712		68 266			
2001	8 409	4 369	18 787	18 787	957		68 978			
2002	9 194	5 271	19 891	19 891	98		77 491			
2003	8 839	4 790	20 309	20 309	1 021		78 276			
2004	91	2	306	306	13		2 358			
2005	3 867	2 256	10 105	10 105	558		41 798			
2006	6 996	4 241	19 276	19 276	837		5 893			
2007	7 209	4 141	97 962	56 418	617		5 259			
2008	3 757	4 705	111 324	64 113	1 018		4 734			

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	2003
	Targeting all age groups	No	–	Distribution – EPI routine and campaign	Yes	2006
				Targeting children < 5 years and pregnant women	Yes	2003
				ITN distribution is subsidized	–	–
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	No	–	Insecticide-resistance management implemented	Yes	2005
	DDT is used for IRS (public health) only	No	–	Where IRS is conducted, other options are also implemented, e.g. ITN	No	–
				IRS is used for prevention and control of epidemics	No	–
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	Yes	2004			
Case management	Oral artemisin in monotherapies banned (prohibited from registration or removed from the system)	Yes	2007	Parasitological confirmation for patients ≥ 5 years only	–	–
	Parasitological confirmation for patients of all ages	Yes	–	Malaria diagnosis is free of charge in the public sector	Yes	–
	ACT is free of charge for < 5 years old in the public sector	Yes	–	ACT is free of charge for patients ≥ 5 years in the public sector	–	–
	Diagnosis of malaria of inpatients is based on parasitological confirmation	Yes	–	ACT is delivered at community level through community agents (beyond the health facilities)	Yes	–
	Pre-referral treatment with quinine or artemether IM or artesunate suppositories	No	–	Uncomplicated malaria cases are admitted	No	–
	Oversight regulation of case management in the private sectors	–	–			
	RDTs used at community level	Yes	–			

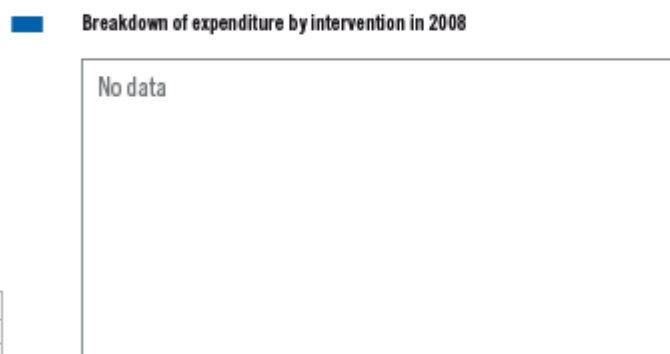
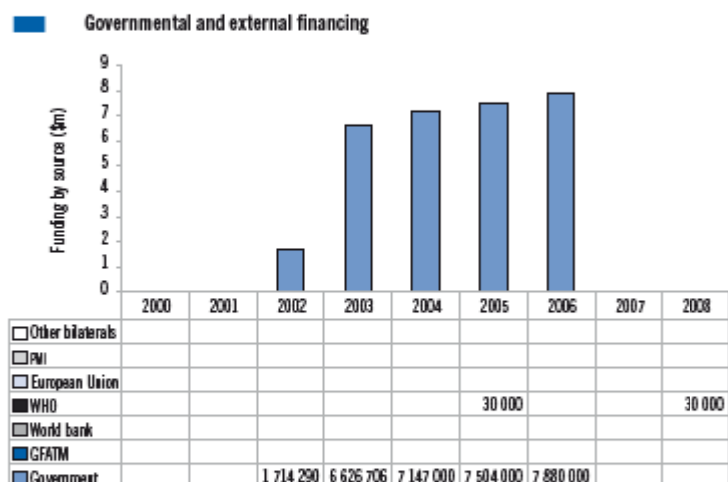
Antimalarial policy	Type of medicine	Year adopted	Results of therapeutic efficacy tests					
			Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25% 75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AL, AS + AQ	–						
First-line treatment of <i>P. falciparum</i> (confirmed)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

III. IMPLEMENTING MALARIA CONTROL



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									
2002									
2003							104 118		
2004			-	-			10 000		
2005							128 293		
2006							267 000		
2007							83 000		
2008							126 000		

IV. FINANCING MALARIA CONTROL



V. SOURCE OF INFORMATION

PROGRAMME DATA		SURVEY AND OTHER DATA	
Reported cases	Surveillance data	Insecticide-treated nets (ITN)	MICS 2000, DHS 2004
Operational coverage of ITNs, IRS and access to medicines	Programme report	Treatment	MICS 2000
Financial data	Programme report	Use of health services	DHS 2004

COLOMBIA

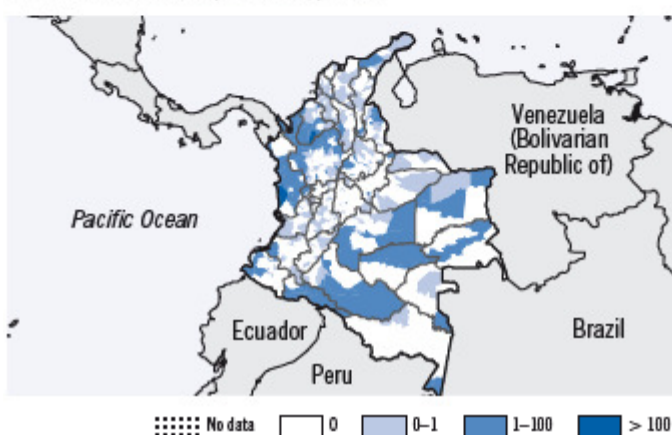
About 18% of the population of Colombia is at risk for malaria. Transmission is highest in the upper Sinú River and lower Cauca River regions, in Urabá and on the Pacific coast. The number of reported malaria cases decreased from 231 233 in 2001 to 79 230 in 2008, and the number of reported malaria deaths fell from 58 in 2001 to 22 in 2008. About 28% of cases were due to *P. falciparum* in 2008. IRS is implemented selectively, protecting 69 000 households and 211 000 people in 2008. Over 280 000 LLINs were distributed in 2007 and 2008. The supply of first-line antimalarial drugs, including 46 350 courses of ACT, was sufficient to treat all reported cases. Funding for malaria control in 2008 reached US\$ 18 million, of which US\$ 17 million was financed by the Government, US\$ 3 million by the Global Fund and US\$ 200 000 by the United States Agency for International Development.

I. EPIDEMIOLOGICAL PROFILE

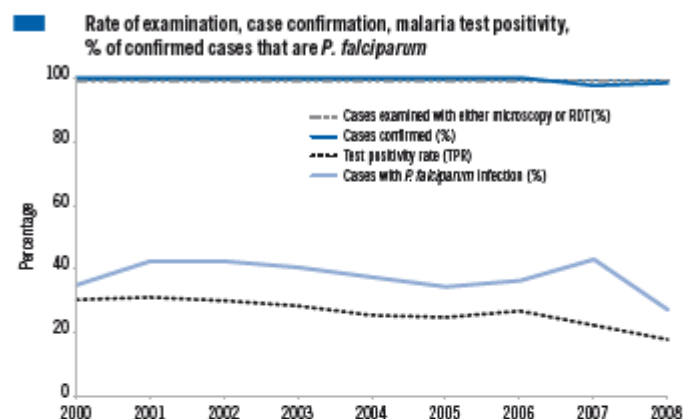
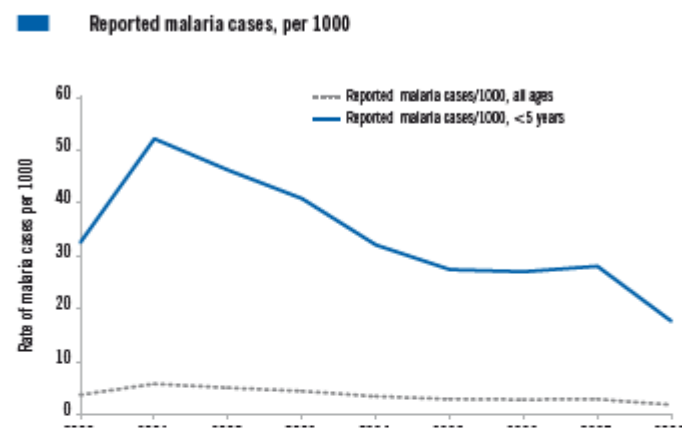
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	45 012	
< 5 years	4 485	10
≥ 5 years	40 527	90
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	3 014	7
Low transmission (0–1/1000)	4 897	11
Malaria-free (0 cases)	37 101	82
Rural population	11 490	26
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>albimanus</i> , <i>darlingi</i> , <i>neivai</i> , <i>numestovari</i> , <i>pseudopunctipennis</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

Stratification of burden (reported cases, per 1000)

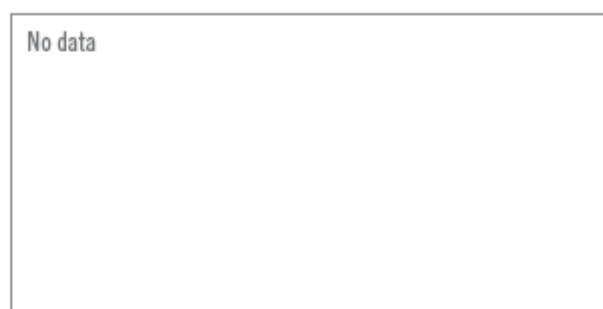


Trends in malaria morbidity and mortality

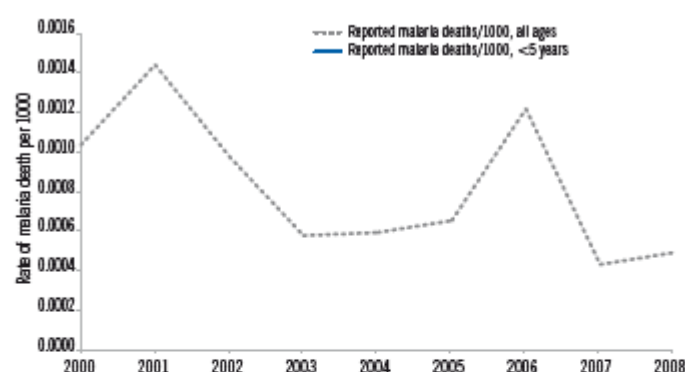


Year	Reported malaria cases, all ages	Reported malaria cases, < 5 years	All-cause outpatient consultations, all ages	All-cause outpatient consultations, < 5 years	Examined	Positive	<i>P. falciparum</i>	Reporting completeness of outpatient health facilities (%)	Reporting completeness of districts (%)
2000	144 432	144 432			478 820	144 432	50 476		
2001	231 233	231 233			747 079	231 233	98 049		
2002	204 916	204 916			686 635	204 916	86 840		
2003	180 956	180 956			640 453	180 956	73 150		
2004	142 241	142 241			562 681	142 241	53 106		
2005	121 629	121 629			493 562	121 629	41 781		
2006	120 096	120 096			451 240	120 096	43 547		
2007	125 262	125 262			564 755	125 262	53 852		
2008	79 230	79 230			447 627	79 230	21 475		

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					41					
2001					58					
2002					40					
2003					24					
2004					25					
2005					28					
2006					53					
2007					19					
2008	223	16			22	3				

II. INTERVENTION POLICIES AND STRATEGIES

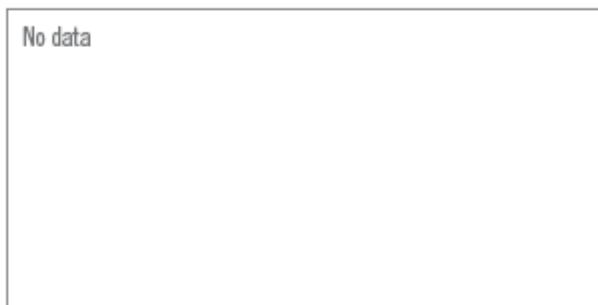
Intervention	WHO-RECOMMENDED POLICIES / STRATEGIES	Yes or No	Year adopted	OPTIONAL POLICIES / STRATEGIES	
				Yes or No	Year adopted
Insecticide-treated nets (ITN)	Distribution of ITN/LLINs – Free	Yes	–	Distribution – Antenatal care	No –
	Targeting all age groups	Yes	2005	Distribution – EPI routine and campaign	No –
				Targeting children < 5 years and pregnant women	No –
				ITN distribution is subsidized	No –
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	No	–	Insecticide-resistance management implemented	Yes 2005
	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 1950s
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	No	–		
Case management	Oral artemisinin monotherapies banned (prohibited from registration or removed from the system)	–	–	Parasitological confirmation for patients ≥ 5 years only	No –
	Parasitological confirmation for patients of all ages	Yes	1960s	Malaria diagnosis is free of charge in the public sector	Yes –
	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	–	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	No	–	Uncomplicated malaria cases are admitted	No –
	Oversight regulation of case management in the private sectors	No	–		
	RDTs used at community level	Yes	2006		

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)	–	–							
First-line treatment of <i>P. falciparum</i> (confirmed)	AL	2006							
Treatment failure of <i>P. falciparum</i>	QN(3d)+CL(5d)	2004							
Treatment of severe malaria	QN(7d)	2004							
Treatment of <i>P. vivax</i>	CQ+PQ (7d)	1960s							

III. IMPLEMENTING MALARIA CONTROL

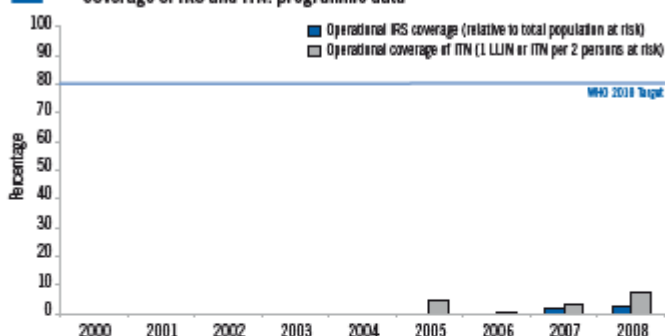
Coverage of ITN: survey data



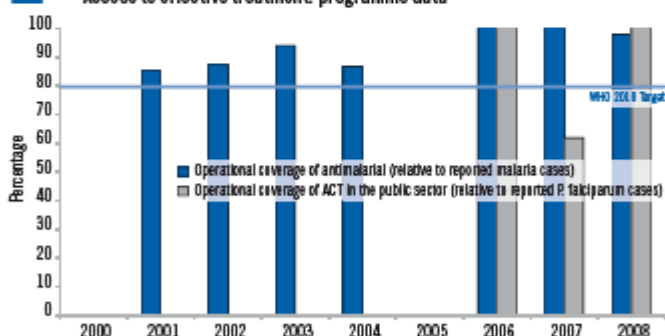
Access by febrile children to effective treatment: survey data



Coverage of IRS and ITN: programme data



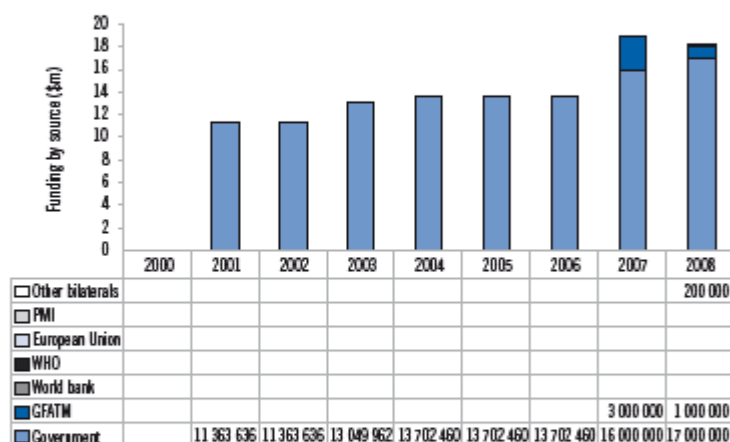
Access to effective treatment: programme data



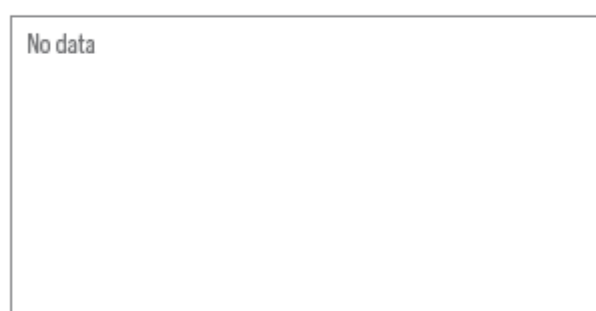
Year	Pregnant women who slept under any net (%)	Pregnant women who slept under an ITN (%)	Children < 5 years with fever (%)	Febrile children < 5 years who sought treatment in HF (%)	Number of households protected by IRS	Number of people protected by IRS	Number of ITNs and/or LLINs	Number of 1st-line treatment courses received	Number of ACT treatment courses received
2000									
2001								196 200	
2002								178 904	
2003								169 816	
2004								122 804	
2005							170 000		
2006							8 360	145 525	51 840
2007					28 728	143 640	87 394	155 132	33 240
2008					68 759	211 294	194 363	79 230	46 350

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	Insecticide-treated nets (ITN)	DHS 2000
Operational coverage of ITNs, IRS and access to medicines	Programme report	Treatment	No surveys
Financial data	Programme report	Use of health services	DHS 2004

SURVEY AND OTHER DATA

CÔTE D'IVOIRE

Côte d'Ivoire had an estimated 8.0 million cases in 2006. Transmission occurs all year round throughout the country but is more seasonal in the north. None of the 1.25 million cases reported in 2006 was confirmed as malaria. There was no evidence of a systematic decrease in the number of malaria cases between 2001 and 2006. The number of malaria deaths increased, perhaps due to improved reporting. IRS is not carried out in Côte d'Ivoire. The national malaria control programme distributed only 1.6 million ITNs between 2006 and 2008. The 2006 multiple indicator cluster survey showed that only 27% of households owned a mosquito net, and just 6% had an ITN. Despite the adoption of ACT as treatment policy in 2003, the programme delivered only 476 000 ACT treatment courses in 2007, which represents 37% of the reported malaria cases in need of treatment. The multiple indicator cluster survey showed that only 3% of febrile children were given ACT. Funding for malaria control increased from less than US\$ 2 million in 2002 to over US\$ 27 million in 2008 funded by the Global Fund, government and UN agencies.

I. EPIDEMIOLOGICAL PROFILE

Population, endemicity and malaria burden

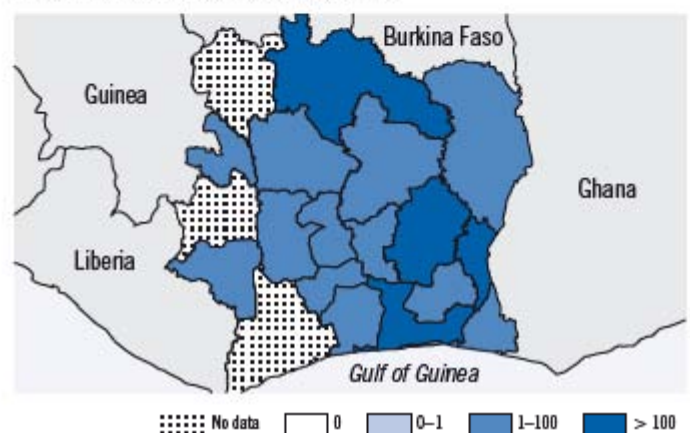
Population (in thousands)	2008	%
All age groups	20 591	
< 5 years	3 139	15
≥ 5 years	17 452	85

Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	20 591	100
Low transmission (0–1/1000)	0	0
Malaria-free (0 cases)	0	0
Rural population	10 537	51

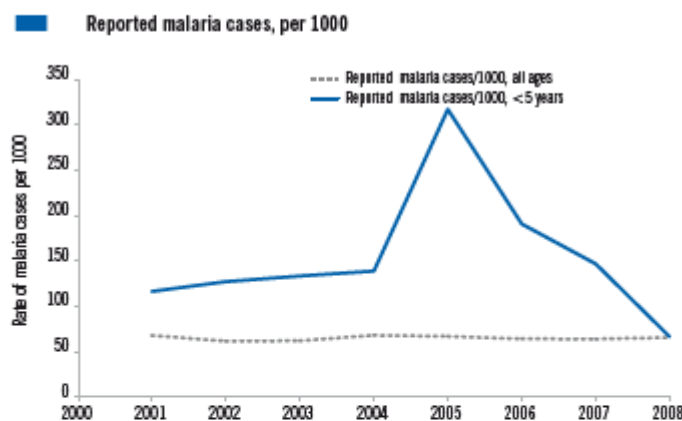
Vector and parasite profiles

Major <i>Anopheles</i> species	<i>gambiae</i> , <i>arabiensis</i> , <i>funestus</i> , <i>brochieri</i> , <i>coustani</i> , <i>Hancocki</i> , <i>hargreavesi</i> , <i>melas</i> , <i>moucheti</i> , <i>moucheti</i> , <i>nili</i> , <i>paludis</i> , <i>pharoensis</i>
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>

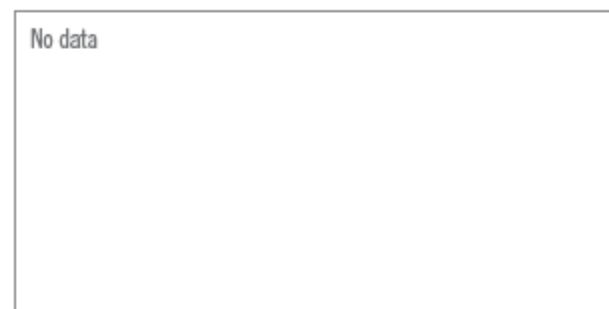
Stratification of burden (reported cases, per 1000)



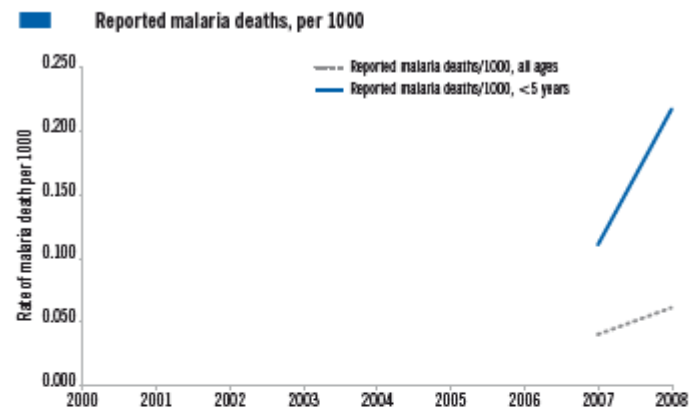
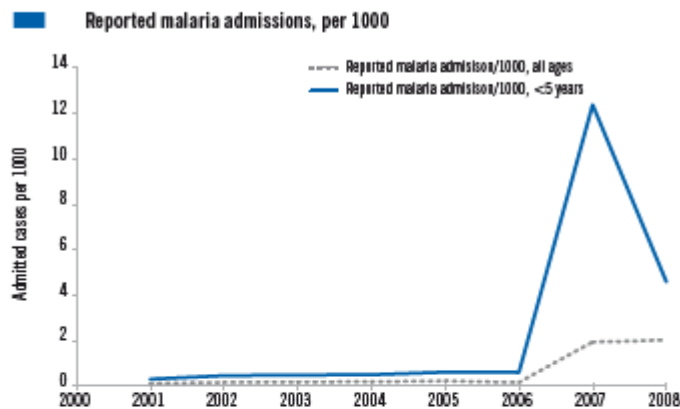
Trends in malaria morbidity and mortality



Rate of examination, case confirmation, malaria test positivity, % of confirmed cases that are *P. falciparum*



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									
2001	1 193 288	321 361	1 969 077	397 679				80	61
2002	1 109 751	359 073	2 318 879	519 240				82	63
2003	1 136 810	384 982	2 368 584	450 098				86	54
2004	1 275 138	409 063	2 349 636	452 086				82	56
2005	1 280 914	952 056	2 664 516					84	58
2006	1 253 408	582 242	3 632 014					58	65
2007	1 277 670	454 725	2 449 332	563 363					
2008	1 343 654	208 459	3 001 009	394 090					



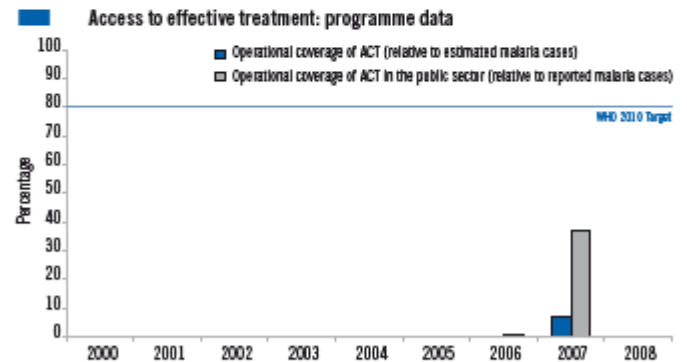
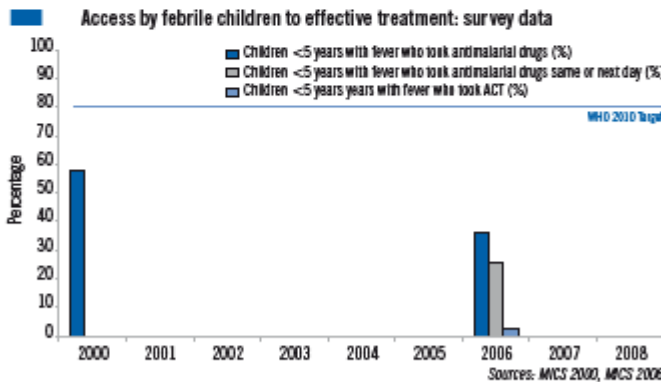
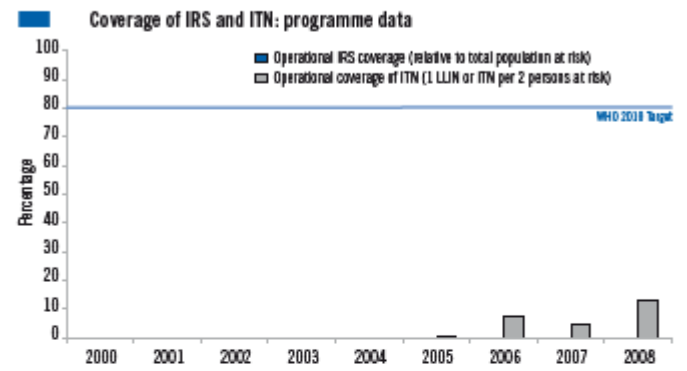
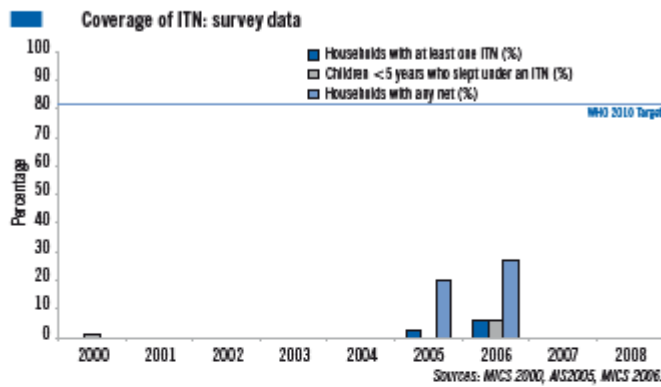
Year	Reported malaria admissions, all ages	Reported malaria admissions, < 5 years	All-cause admissions, all ages	All-cause admissions, < 5 years	Reported malaria deaths, all ages	Reported malaria deaths, < 5 years	All-cause deaths, all ages	All-cause deaths, < 5 years	Reporting completeness of inpatient health facilities (%)	Reporting completeness of districts (%)
2000										
2001	1 513	808	153 998				113 292	113 217		
2002	2 407	1 268	181 133				161 824	160 818		
2003	2 862	1 365	148 358				151 955	150 132		
2004	3 085	1 430	96 621				160 855	160 627		
2005	3 934	1 799	110 261				169 913	167 901		
2006	2 527	1 806	134 241				204 394	201 380		
2007	38 307	38 307	97 350		797	342	6 540	1 414		
2008	41 189	14 368	123 341	17 801	1 249	682	5 550	1 775		

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	2006
	Targeting all age groups	Yes	2005	Distribution – EPI routine and campaign	Yes	2006
				Targeting children < 5 years and pregnant women	Yes	2005
				ITN distribution is subsidized	No	–
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	No	–	Insecticide-resistance management implemented	Yes	1998
	DDT is used for IRS (public health) only	No	–	Where IRS is conducted, other options are also implemented, e.g. ITN	No	–
				IRS is used for prevention and control of epidemics	No	–
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	Yes	2005			
Case management	Oral artemisin in monotherapies banned (prohibited from registration or removed from the system)	Yes	2005	Parasitological confirmation for patients ≥ 5 years only	Yes	2005
	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	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	No	–	Uncomplicated malaria cases are admitted	No	–
	Oversight regulation of case management in the private sectors	No	–			
	RDTs used at community level	No	–			

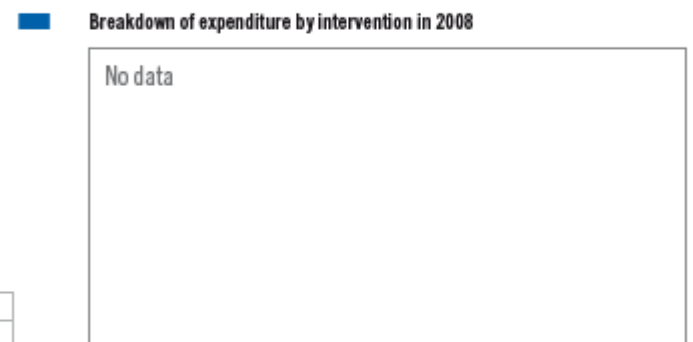
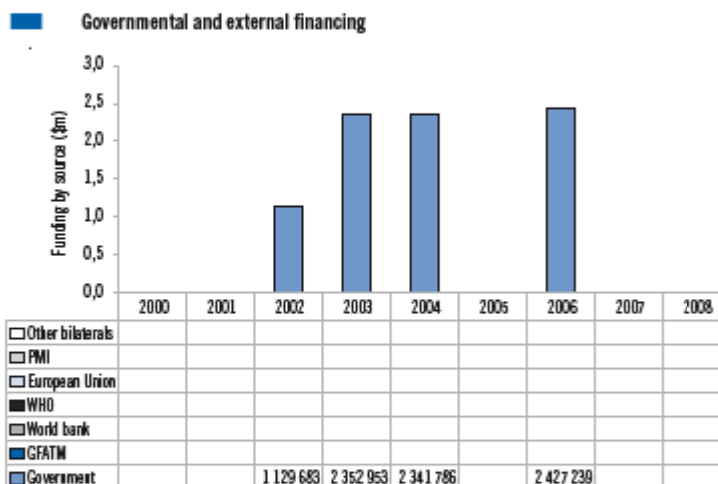
Antimalarial policy	Type of medicine	Year adopted	Results of therapeutic efficacy tests						
			Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AS+AQ	2003	2008–2009	2	0	0	0	0	0
First-line treatment of <i>P. falciparum</i> (confirmed)	AS+AQ	2003							
Treatment failure of <i>P. falciparum</i>	AL	2003	2005–2009	4	2.0999	0	7.4	0.8	5
Treatment of severe malaria	QN(7d)	2003							
Treatment of <i>P. vivax</i>	–	–							

III. IMPLEMENTING MALARIA CONTROL



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									
2002									
2003							5 000		
2004							12 000		
2005							53 696	971 683	
2006							371 816	1 102 879	4 875
2007							169 832	721 314	476 203
2008							1 034 486		

IV. FINANCING MALARIA CONTROL



V. SOURCE OF INFORMATION

PROGRAMME DATA	SURVEY AND OTHER DATA
Reported cases	Surveillance data
Operational coverage of ITNs, IRS and access to medicines	Insecticide-treated nets (ITN)
Financial data	Treatment
	Use of health services

MICS 2000, AIS 2005, MICS 2006
MICS 2000, MICS 2006
MICS 2006

DEMOCRATIC REPUBLIC OF THE CONGO

The Democratic Republic of the Congo, with 61 million people, accounted for an estimated 11% of all estimated malaria cases in the WHO African Region in 2006. Transmission occurs all year round, but with seasonal variation. Almost none of the 5 million reported suspected malaria cases in 2008, largely due to *P. falciparum*, are confirmed. The number of malaria deaths reported by the programme was 18 928 in 2008 alone. The programme delivered a total of about 11.2 million LLINs during 2006–2008, adequate to protect about 37% of the population. IRS was begun in 2008 in selected districts, covering only 83 000 people at risk. The programme delivered a total of 1.7 million ACT treatment courses in public facilities in 2008, covering only 32% of the treatment needs in those facilities. Funding for malaria increased from US\$ 20 million in 2005 to over US\$ 50 million in 2008, mainly from the World Bank and the Global Fund, with about US\$ 2 million annually from the Government.

I. EPIDEMIOLOGICAL PROFILE

Population, endemicity and malaria burden

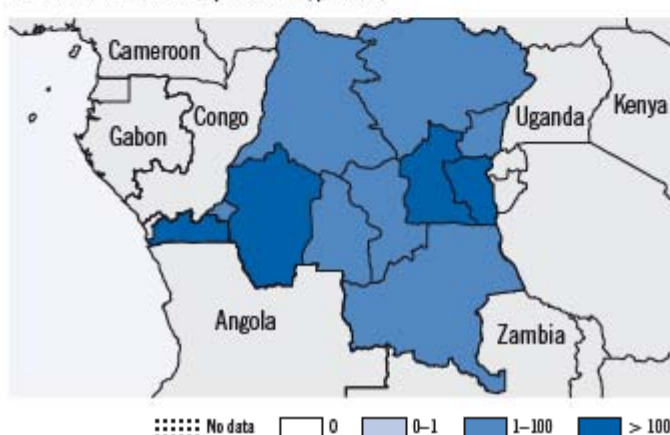
Population (in thousands)	2008	%
All age groups	64 704	
< 5 years	21 944	34
≥ 5 years	42 760	66
Population by malaria endemicity (in thousands)		
High transmission ≥ 1/1000	62 763	97
Low transmission (0–1/1000)	1 941	3
Malaria-free (0 cases)	0	0
Rural population	64 704	100

Vector and parasite profiles

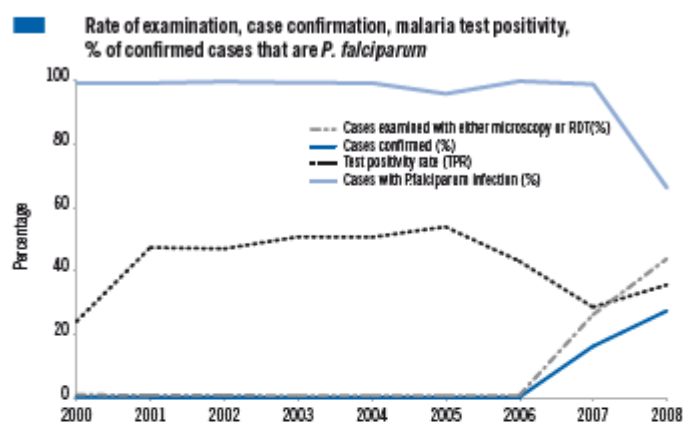
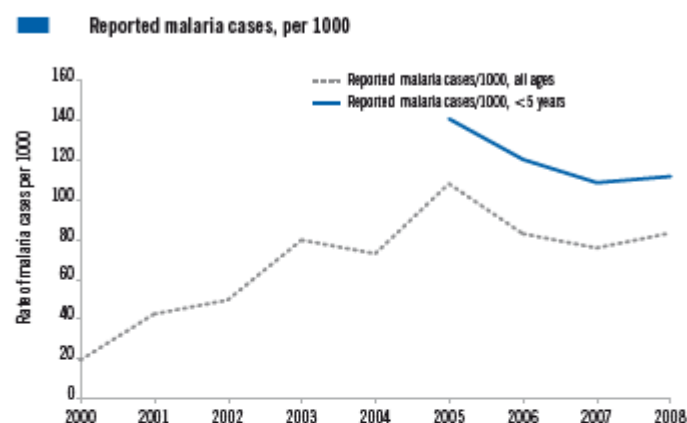
Major <i>Anopheles</i> species	<i>gambiae</i> , <i>arabiensis</i> , <i>funestus</i> , <i>brochieri</i> , <i>coustani</i> , <i>hancocki</i> , <i>hargreavesi</i> , <i>melas</i> , <i>moucheti</i> , <i>moucheti</i> , <i>paludis</i> , <i>pharoensis</i>
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<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>
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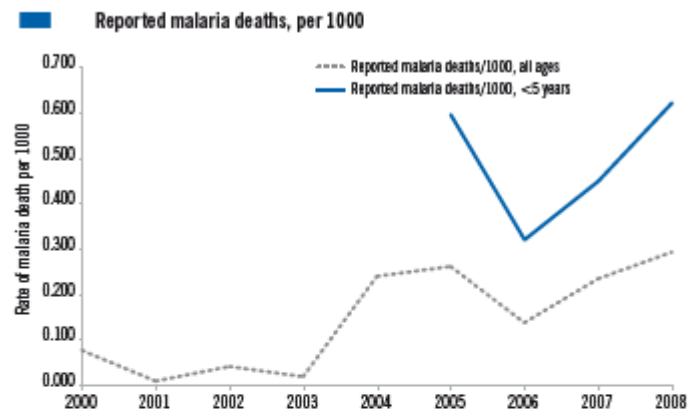
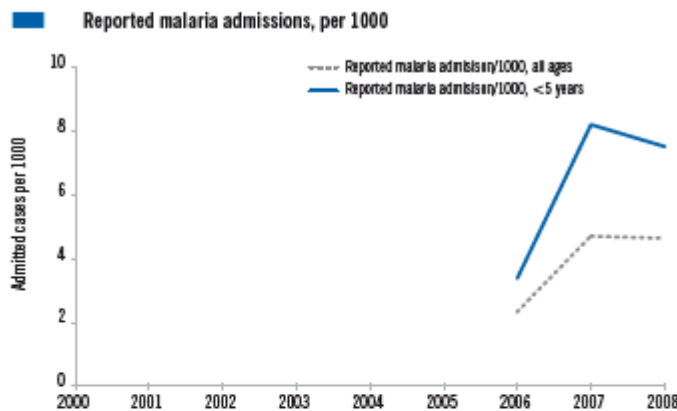
Stratification of burden (reported cases, per 1000)



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	964 623		1 045 630		3 758	897	889		
2001	2 199 247		2 259 025		3 244	1 531	1 517		
2002	2 640 168		2 771 867		3 704	1 735	1 727		
2003	4 386 638		4 548 049		4 820	2 438	2 418		
2004	4 133 514				5 320	2 684	2 659		
2005	6 334 608	2 650 284	6 994 007		5 531	2 971	2 844		
2006	5 008 959	2 380 353	6 291 164	2 735 273	4 779	2 050	2 043		
2007	4 730 484	2 260 081	9 301 888	4 109 716	1 207 850	759 059	1 642	48	
2008	5 371 196	2 450 304	10 314 473	4 455 022	2 314 880	1 462 300	1 196	53	



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					3 856		7 354			
2001					416		14 574			
2002					2 152		12 197			
2003					989		19 868			
2004					13 613		16 359			
2005					15 322	11 241	21 835			
2006	139 879	66 957	366 702	149 841	8 295	6 350	12 970	8 007		
2007	293 625	171 118	1 036 224	541 644	14 637	9 370	46 810	30 071		
2008	299 158	164 983	1 101 199	530 323	18 928	13 655	56 943	31 245		

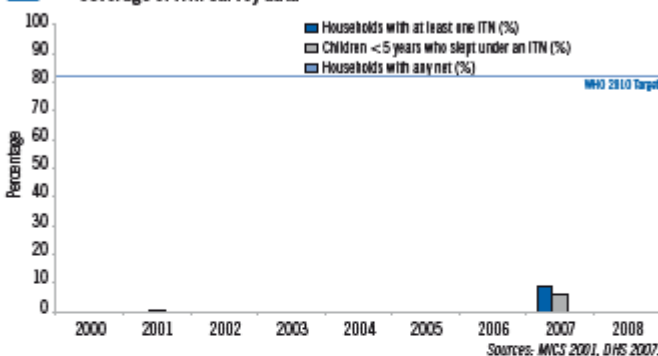
II. INTERVENTION POLICIES AND STRATEGIES

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 2003
	Targeting all age groups	Yes	2008	Distribution – EPI routine and campaign	Yes 2003
				Targeting children < 5 years and pregnant women	Yes 2006
				ITN distribution is subsidized	Yes 2003
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	Yes	2008	Insecticide-resistance management implemented	Yes 2008
	DDT is used for IRS (public health) only	Yes	2008	Where IRS is conducted, other options are also implemented, e.g. ITN	Yes 2008
				IRS is used for prevention and control of epidemics	Yes 2008
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	Yes	2004		
Case management	Oral artemisinin monotherapies banned (prohibited from registration or removed from the system)	Yes	2007	Parasitological confirmation for patients ≥ 5 years only	Yes –
	Parasitological confirmation for patients of all ages	Yes	–	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	Yes	2009	ACT is delivered at community level through community agents (beyond the health facilities)	Yes 2007
	Pre-referral treatment with quinine or artemether IM or artesunate suppositories	No	–	Uncomplicated malaria cases are admitted	No –
	Oversight regulation of case management in the private sectors	Yes	2005		
	RDTs used at community level	No	–		

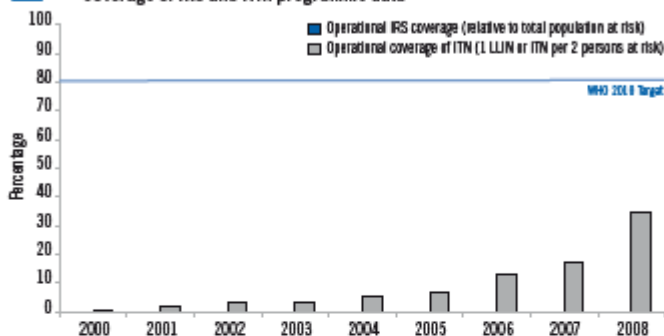
Antimalarial policy	Type of medicine	Year adopted	Results of therapeutic efficacy tests						
			Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AS+AQ	2005	2003–2005	8	6.2	0	19	2.5	6.8
First-line treatment of <i>P. falciparum</i> (confirmed)	AS+AQ	2005							
Treatment failure of <i>P. falciparum</i>	QN(7d)	2005							
Treatment of severe malaria	QN(7d)	2005							
Treatment of <i>P. vivax</i>	–	–							

III. IMPLEMENTING MALARIA CONTROL

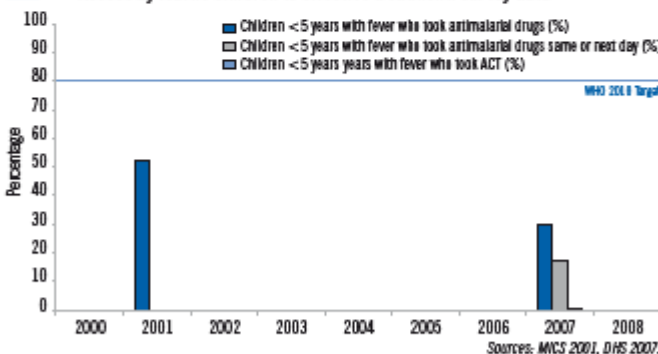
Coverage of ITN: survey data



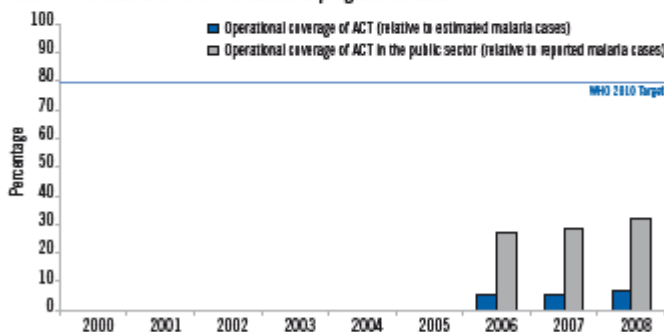
Coverage of IRS and ITN: programme data



Access by febrile children to effective treatment: survey data



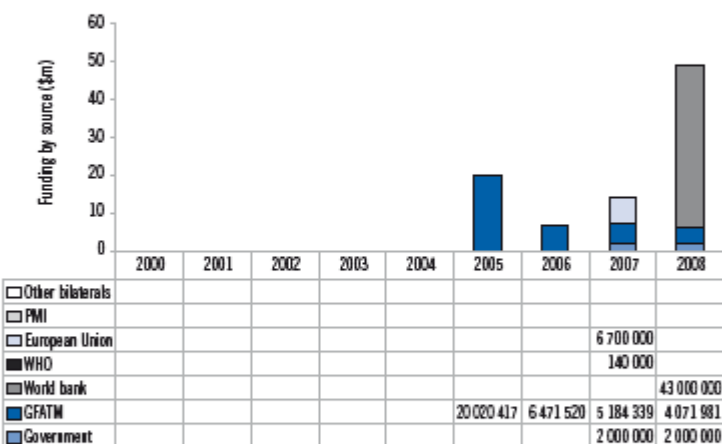
Access to effective treatment: programme data



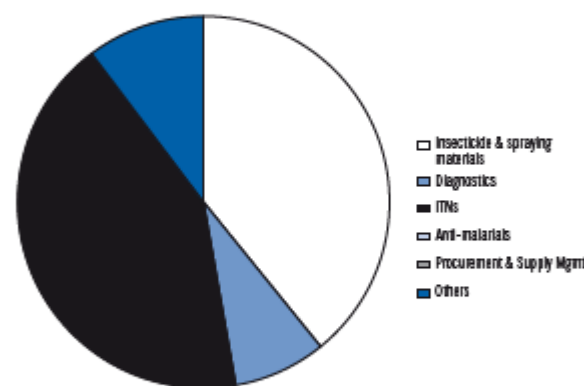
Year	Pregnant women who slept under any net (%)	Pregnant women who slept under an ITN (%)	Children < 5 years with fever (%)	Febrile children < 5 years who sought treatment in HF (%)	Number of households protected by IRS	Number of people protected by IRS	Number of ITNs and/or LLINs	Number of 1st-line treatment courses received	Number of ACT treatment courses received
2000							70 000		
2001							400 000		
2002							583 650		
2003							338 856		
2004							877 131		
2005							791 135		
2006							3 153 026	1 373 318	1 373 318
2007							2 385 684	1 348 304	1 348 304
2008					22 000	82 975	5 788 513	1 723 655	1 723 655

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 2001, DHS 2007
Treatment	MICS 2001, DHS 2007
Use of health services	MICS 2001

ETHIOPIA

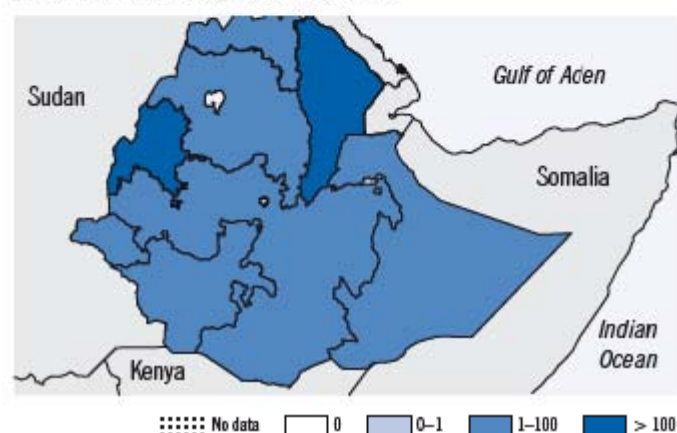
Ethiopia had approximately 4% of all cases in the African Region in 2006. Malaria is present everywhere except in the central highlands. Epidemics are frequent, the last having occurred in 2003–2004. Over half the cases are caused by *P. falciparum*. The number of reported malaria cases decreased from an average of 3.2 million (excluding the epidemic year, 2004) to 2 532 645 in 2008, of which over 986 000 were tested (39%) by either microscopy or a RDT, and 460 000 cases were confirmed. The reported number of malaria deaths in children under 5 years fell from an average of 1866 during 2001–2006 to only 1169 in 2008 (a decrease of over 37%). The programme distributed 19.6 million LLINs between 2006 and 2008, targeting 40 million people at risk. The percentage of households with one ITN increased from 3% nationwide in 2005 to 66% in 2007. IRS was expanded to cover 5.6 million households, protecting 28 million people at risk. Nearly 4 million treatment courses of ACT were delivered in 2007 and 8 million in 2008, which was adequate to cover all reported cases in the public sector. The recent decrease in the number of cases and deaths coincides with rapid expansion of control efforts. Funding increased from US\$ 2.7 million in 2001 to over US\$ 200 million between 2004 and 2007, mainly from the Global Fund and the United States President's Malaria Initiative. The Government provides about US\$ 5 million annually. With the round 8 Global Fund grant, the programme has secured over US\$ 150 million for the next five years.

I. EPIDEMIOLOGICAL PROFILE

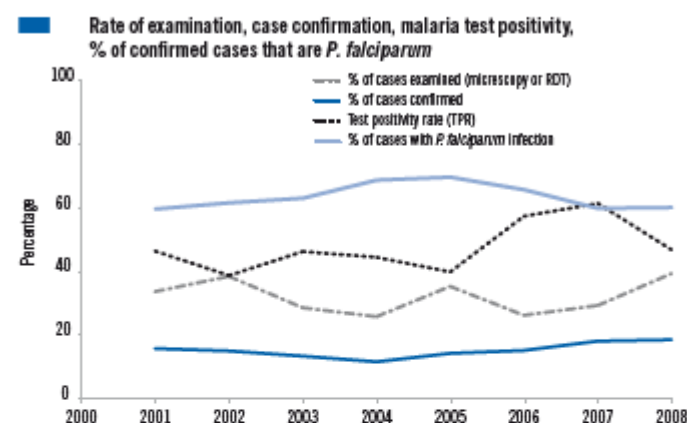
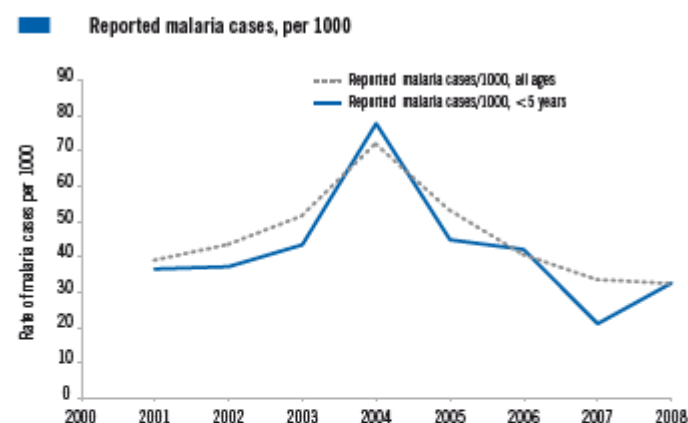
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	80 713	
< 5 years	13 323	17
≥ 5 years	67 390	83
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	1 022	1
Low transmission (0–1/1000)	53 128	66
Malaria-free (0 cases)	26 564	33
Rural population	67 057	83
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>arabiensis</i> , <i>funestus</i> , <i>coustani</i> , <i>nii</i> , <i>paludis</i> , <i>pharoensis</i> , <i>quadrimaculatus</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

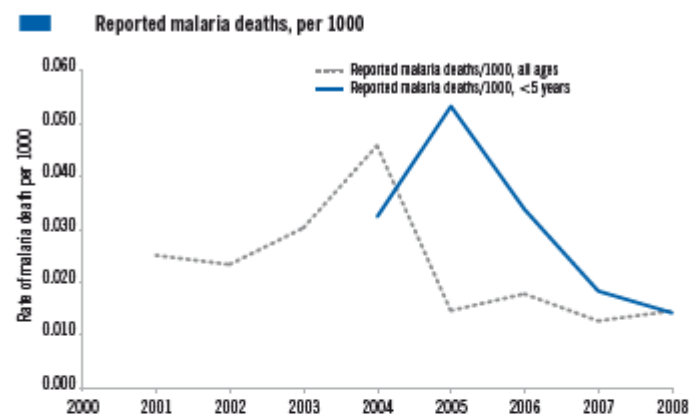
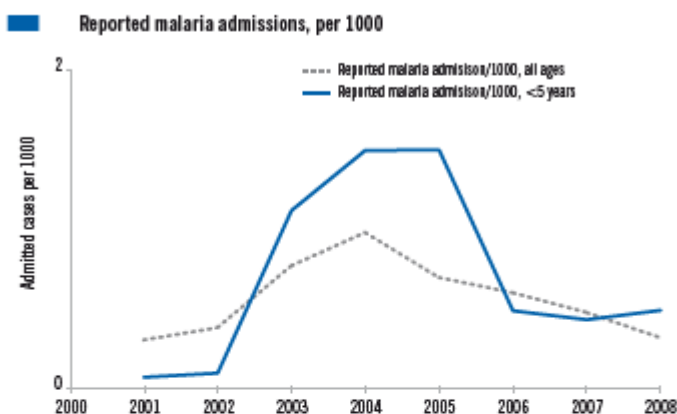
Stratification of burden (reported cases, per 1000)



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									
2001	2 555 314	428 089	11 097 537		851 942	392 377	233 218		
2002	2 929 685	441 811	10 916 435		1 115 167	427 795	262 623		
2003	3 582 097	522 491	11 660 924		1 010 925	463 797	291 403		
2004	5 170 614	948 587	12 264 096		1 312 422	578 904	396 621		
2005	3 901 957	554 262	14 353 595		1 364 194	538 942	374 335		
2006	3 038 565	528 603	24 620 248		785 209	447 780	293 326		
2007	2 557 152	268 854	24 737 524		739 627	451 816	269 514		
2008	2 532 645	422 248	18 835 927	519 099	986 323	458 561	274 657		



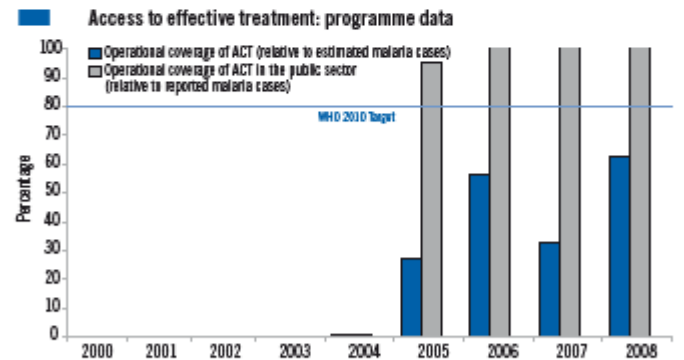
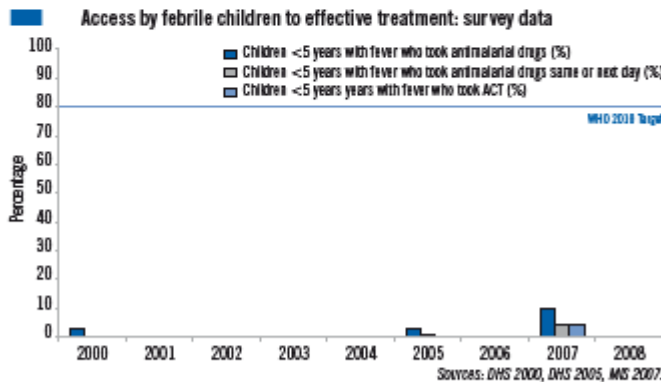
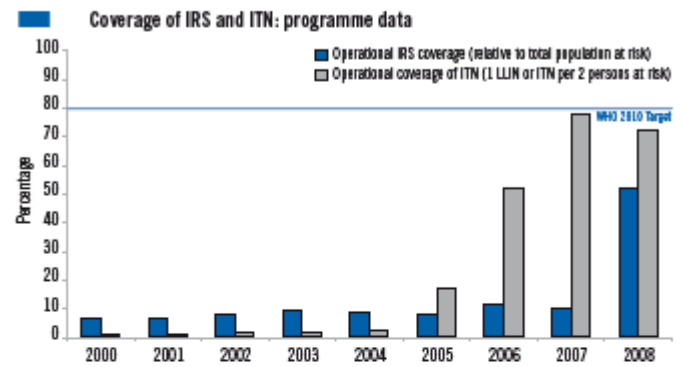
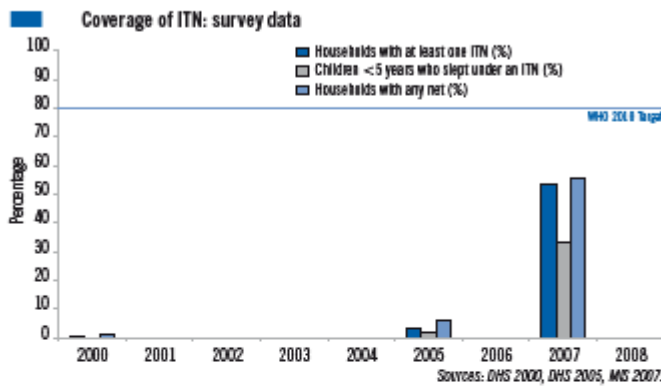
Year	Reported malaria admissions, all ages	Reported malaria admissions, < 5 years	All-cause admissions, all ages	All-cause admissions, < 5 years	Reported malaria deaths, all ages	Reported malaria deaths, < 5 years	All-cause deaths, all ages	All-cause deaths, < 5 years	Reporting completeness of inpatient health facilities (%)	Reporting completeness of districts (%)
2000										
2001	20 432	848	225 820		1 681		11 113			
2002	26 343	1 171	223 560		1 607		10 573			
2003	54 654	13 682	303 640		2 138		10 796			
2004	71 341	18 565	299 535		3 327	401	9 242			
2005	52 044	18 880	260 123		1 086	670	6 918			
2006	46 130	6 266	186 245		1 357	432	60 918			
2007	37 546	5 668	209 699		991	239	37 508			
2008	25 739	6 563	381 623	19 870	1 169	189	19 610	948		

II. INTERVENTION POLICIES AND STRATEGIES

Intervention	WHO-RECOMMENDED 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	2004	Distribution – Antenatal care	No	–
	Targeting all age groups	Yes	2004	Distribution – EPI routine and campaign	Yes	2006
				Targeting children < 5 years and pregnant women	Yes	2001
				ITN distribution is subsidized	Yes	2004
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	Yes	1997	Insecticide-resistance management implemented	Yes	1997
	DDT is used for IRS (public health) only	Yes	1998	Where IRS is conducted, other options are also implemented, e.g. ITN	Yes	1997
				IRS is used for prevention and control of epidemics	Yes	1998
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	No	–			
Case management	Oral artemisinin monotherapies banned (prohibited from registration or removed from the system)	Yes	1997	Parasitological confirmation for patients ≥ 5 years only	No	–
	Parasitological confirmation for patients of all ages	Yes	1997	Malaria diagnosis is free of charge in the public sector	Yes	2004
	ACT is free of charge for < 5 years old in the public sector	Yes	2004	ACT is free of charge for patients ≥ 5 years in the public sector	Yes	2004
	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)	Yes	2004
	Pre-referral treatment with quinine or artemether IM or artesunate suppositories	Yes	1997	Uncomplicated malaria cases are admitted	No	–
	Oversight regulation of case management in the private sectors	No	–			
	RDTs used at community level	Yes	2004			

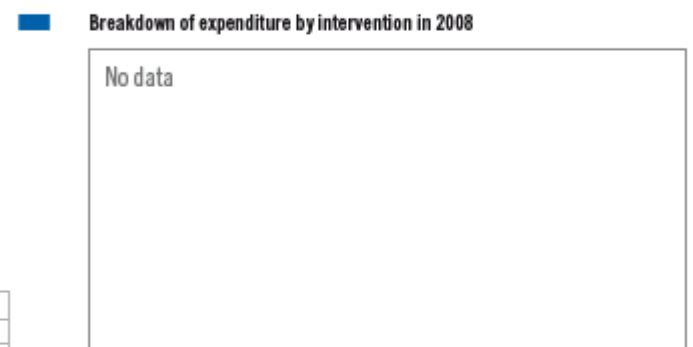
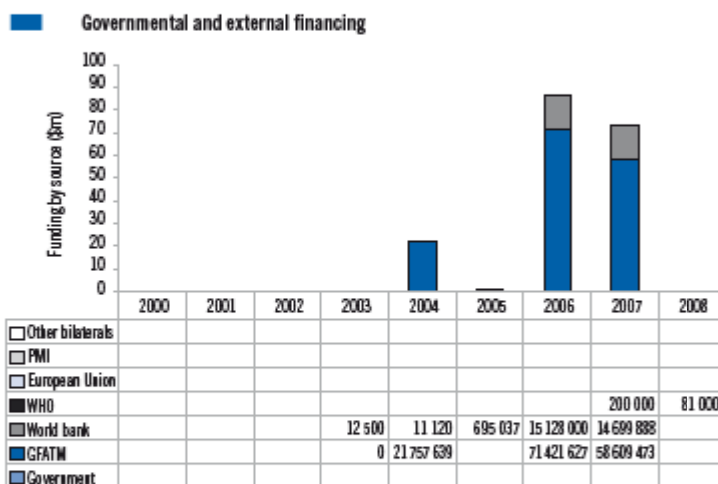
Antimalarial policy	Type of medicine	Year adopted	Results of therapeutic efficacy tests						
			Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AL	2004	2003–2008	8	0	0	3.4	0	2.9
First-line treatment of <i>P. falciparum</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>	CQ	2004							

III. IMPLEMENTING MALARIA CONTROL



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			-	-	568 780	2 843 898	250 000		
2001					711 376	2 960 986	280 000		
2002					768 430	3 826 898	320 000		
2003					517 925	4 298 183	430 000		
2004					521 010	4 228 465	550 000	9 725 000	25 000
2005	2	1	-	-	594 521	3 912 903	4 243 157	3 500 000	3 193 993
2006					702 959	5 984 485	9 070 718	6 950 000	6 806 744
2007	37	35	-	-	2 523 902	5 303 213	7 178 443	5 450 400	4 032 640
2008					5 641 275	28 206 375	3 316 696		8 000 000

IV. FINANCING MALARIA CONTROL



V. SOURCE OF INFORMATION

PROGRAMME DATA	SURVEY AND OTHER DATA
Reported cases	Surveillance data
Operational coverage of ITNs, IRS and access to medicines	Insecticide-treated nets (ITN)
Financial data	Treatment
	Use of health services

Sources: DHS 2000, DHS 2005, MIS 2007; Programme report; DHS 1997.

GHANA

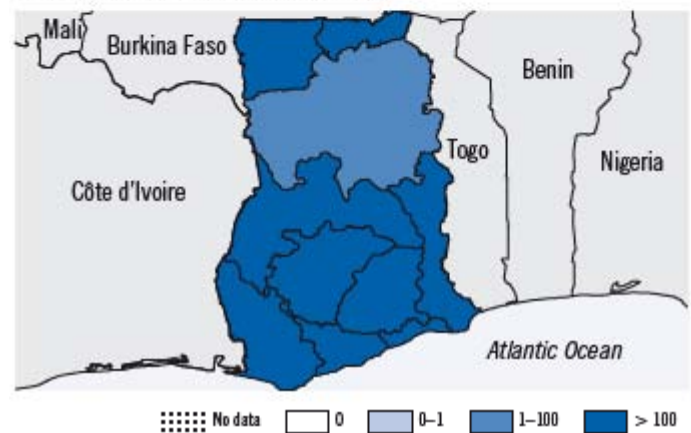
Ghana had an estimated 8.3 million malaria cases in 2006 and 3.2 million in 2008. Most cases are caused by *P. falciparum*; 26% of the reported cases were confirmed in 2008. There was no evidence of a reduction in the number of cases between 2001 and 2007, and the numbers of reported inpatient cases 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

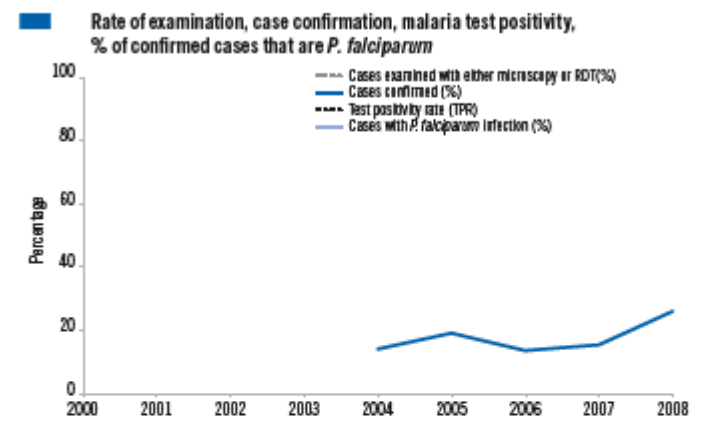
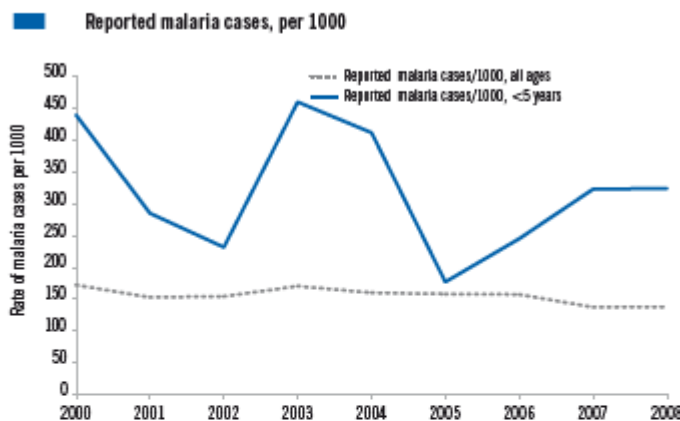
Population, endemicity and malaria burden

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>flavicocta</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)

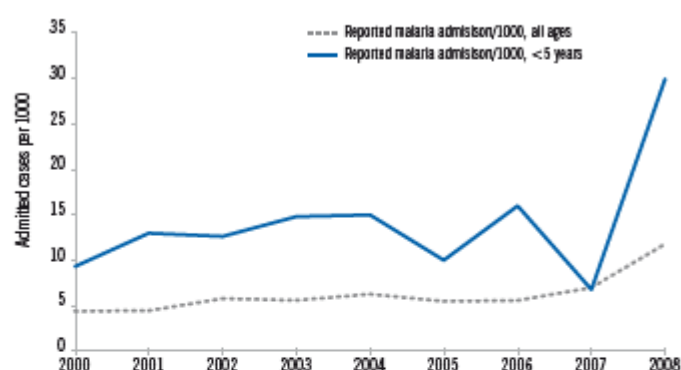


Trends in malaria morbidity and mortality

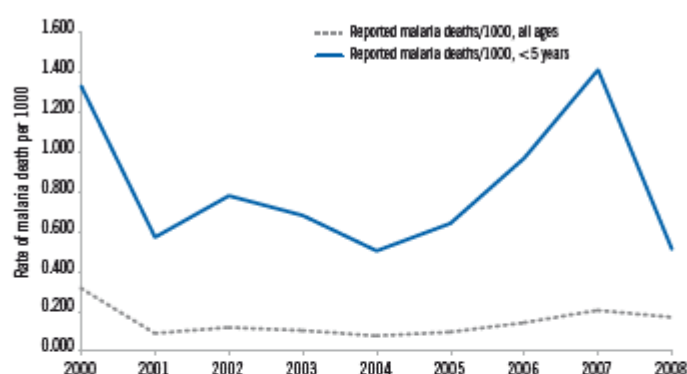


Year	Reported malaria cases, all ages	Reported malaria cases, < 5 years	All-cause outpatient consultations, all ages	All-cause outpatient consultations, < 5 years	Examined	Positive	<i>P. falciparum</i>	Reporting completeness of outpatient health facilities (%)	Reporting completeness of districts (%)
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

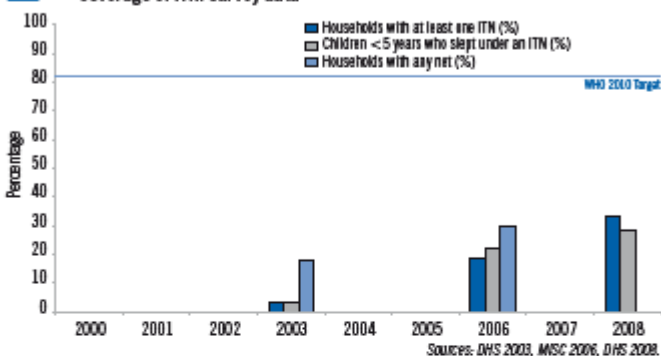
Intervention	WHO-RECOMMENDED POLICIES / STRATEGIES		OPTIONAL POLICIES / STRATEGIES			
	Yes or No	Year adopted	Yes or No	Year adopted		
Insecticide-treated nets (ITN)	Distribution of ITN/LLINs – Free	Yes	2006	Distribution – Antenatal care	Yes	1999
	Targeting all age groups	No	–	Distribution – EPI routine 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

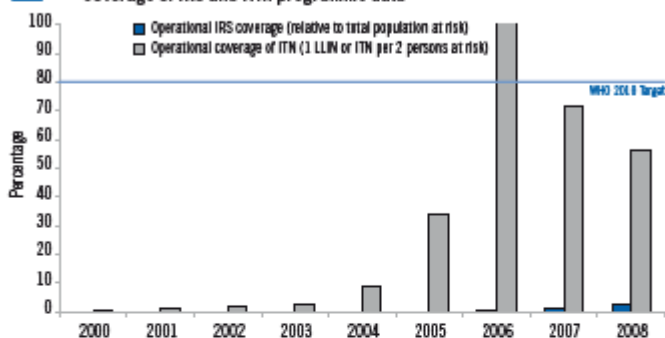
Antimalarial policy	Type of medicine	Year adopted	Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AL, AS + AQ	2004							
First-line treatment of <i>P. falciparum</i> (confirmed)	AL, AS + AQ	2004							
Treatment failure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

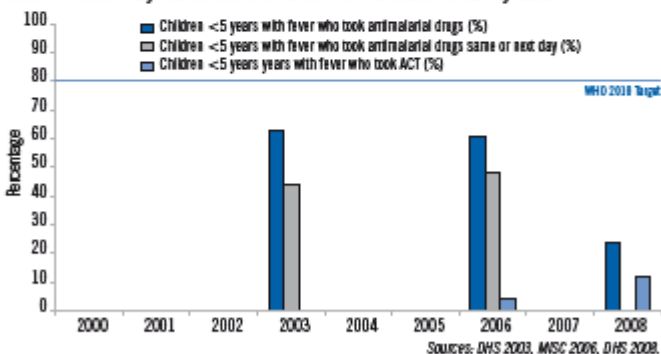
Coverage of ITN: survey data



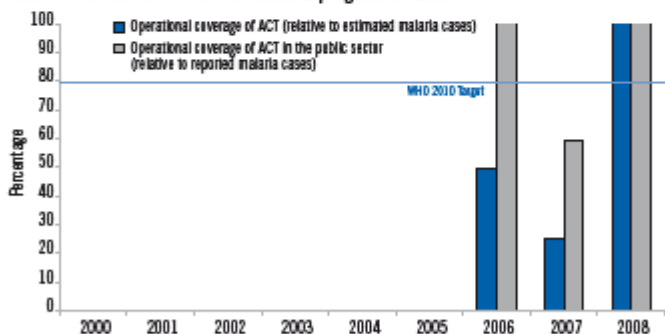
Coverage of IRS and ITN: programme data



Access by febrile children to effective treatment: survey data



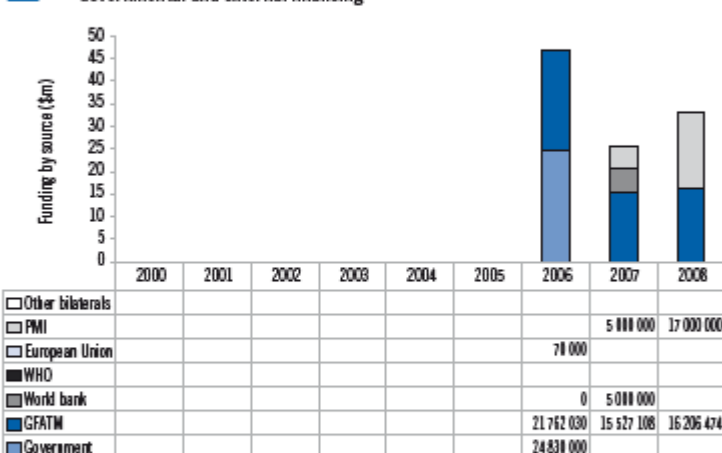
Access to effective treatment: programme data



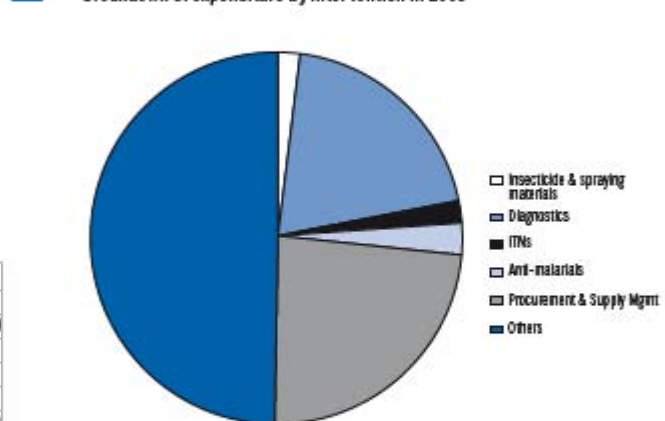
Year	Pregnant women who slept under any net (%)	Pregnant women who slept under an ITN (%)	Children < 5 years with fever (%)	Febrile children < 5 years who sought treatment in HF (%)	Number of households protected by IRS	Number of people protected by IRS	Number of ITNs and/or LLINs	Number of 1st-line 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

INDIA

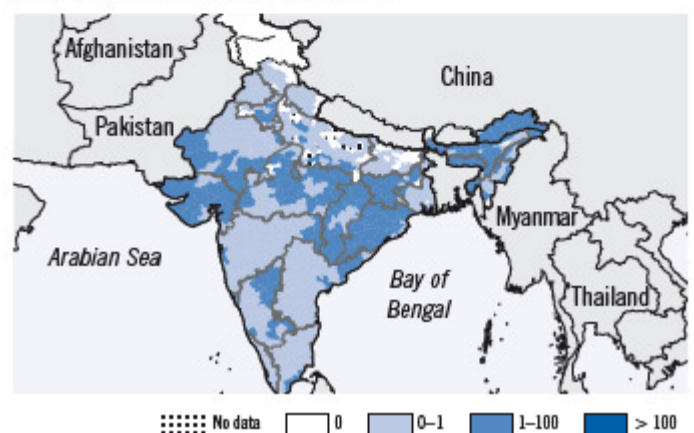
India accounts for approximately two thirds of the confirmed cases reported in the South-East Asia Region. In 2008, 96 million slides were examined, from which 1.5 million cases were confirmed. The number of cases has fallen from more than 2 million confirmed in 2000 to 1.5 million cases in 2008. About half the cases confirmed are due to *P. falciparum*. Five states account for 60% of cases: Orissa, Chhattisgarh, Madhya Pradesh, Jharkhand and West Bengal. Other highly endemic states include Arunachal Pradesh, Assam, Meghalaya and Tripura. A demographic and household survey carried out in 2005–2006 found that 36% of households owned a mosquito net. IRS has been the main method of mosquito control, covering about 54 million people at risk. The programme delivered 7.2 million ITNs, more than 3 million first-line treatments and 600 000 courses of ACT during 2008, enough to treat over two thirds of *P. falciparum* malaria cases. Funding for malaria programmes from domestic and external sources increased from US\$ 54 million in 2001 to US\$ 110 million in 2008, of which 65% was from the Government.

I. EPIDEMIOLOGICAL PROFILE

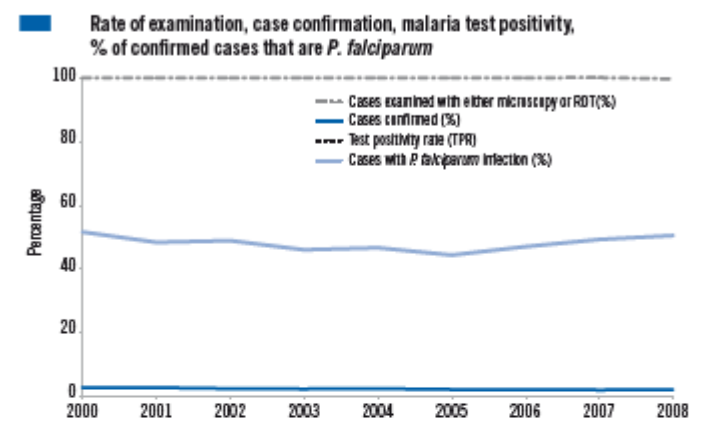
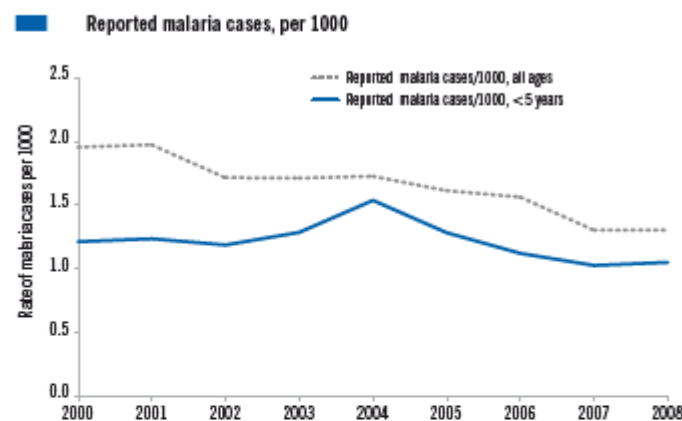
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	1 181 412	
< 5 years	126 642	11
≥ 5 years	1 054 770	89
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	307 189	26
Low transmission (0–1/1000)	755 223	64
Malaria-free (0 cases)	118 999	10
Rural population	833 321	71
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>stephensi, culicifacies, dirus, fluviatilis, minimus, philippinensis</i>	
<i>Plasmodium</i> species	<i>falciparum, vivax</i>	

Stratification of burden (reported cases, per 1000)

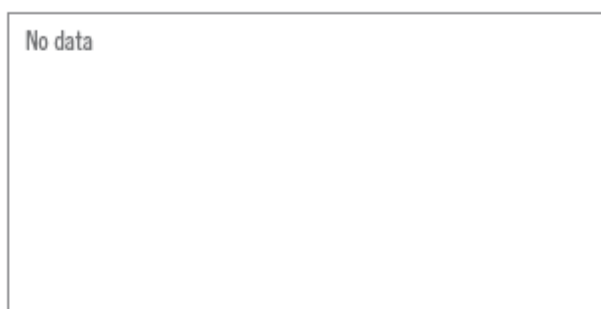


Trends in malaria morbidity and mortality

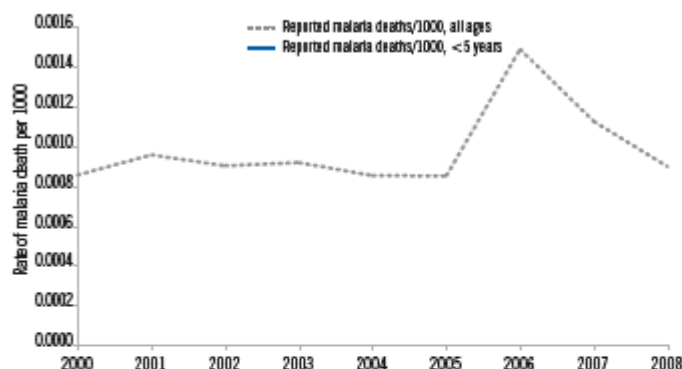


Year	Reported malaria cases, all ages	Reported malaria cases, < 5 years	All-cause outpatient consultations, all ages	All-cause outpatient consultations, < 5 years	Examined	Positive	<i>P. falciparum</i>	Reporting completeness of outpatient health facilities (%)	Reporting completeness of districts (%)
2000	2 031 790	153 500			86 790 375	2 031 790	1 045 170	100	100
2001	2 085 484	156 700			90 389 019	2 085 484	1 005 236	100	100
2002	1 841 227	150 605			91 617 725	1 841 227	897 446	100	100
2003	1 869 403	163 573			99 136 143	1 869 403	857 101	100	100
2004	1 915 363	196 064			97 111 526	1 915 363	890 152	100	100
2005	1 816 569	163 471			104 120 792	1 816 569	805 077	100	100
2006	1 785 109	142 463			106 606 703	1 785 109	838 555	100	100
2007	1 508 927	129 937			94 925 988	1 508 927	725 502	100	100
2008	1 532 467	132 431			95 368 303	1 532 467	771 670	100	100

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					892				100	100
2001					1 015				100	100
2002					973				100	100
2003					1 006				100	100
2004					949				100	100
2005					963				100	100
2006					1 708				100	100
2007					1 311				100	100
2008					1 061				100	100

II. INTERVENTION POLICIES AND STRATEGIES

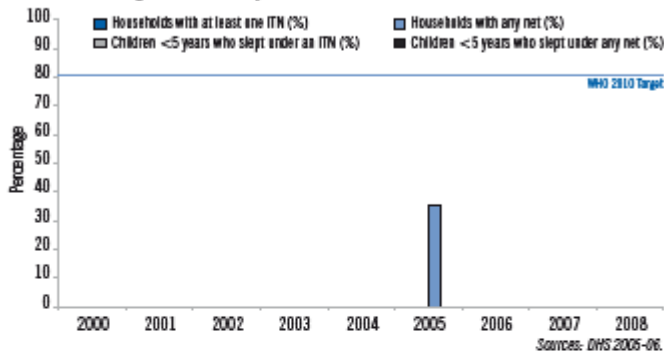
Intervention	WHO-RECOMMENDED POLICIES / STRATEGIES	Yes	Year	OPTIONAL POLICIES / STRATEGIES	Yes	Year
		or No	adopted		or No	adopted
Insecticide-treated nets (ITN)	Distribution of ITN/LLINs – Free	Yes	2001	Distribution – Antenatal care	Yes	2003
	Targeting all age groups	Yes	2001	Distribution – EPI routine and campaign	No	–
				Targeting children < 5 years and pregnant women	No	–
				ITN distribution is subsidized	No	–
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	Yes	2000	Insecticide-resistance management implemented	Yes	2000
	DDT is used for IRS (public health) only	Yes	2000	Where IRS is conducted, other options are also implemented, e.g. ITN	Yes	2001
				IRS is used for prevention and control of epidemics	Yes	2000
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	No	–			
Case management	Oral artemisin in monotherapies banned (prohibited from registration or removed from the system)	Yes	2009	Parasitological confirmation for patients ≥ 5 years only	No	–
	Parasitological confirmation for patients of all ages	Yes	2000	Malaria diagnosis is free of charge in the public sector	Yes	2000
	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	2000	ACT is delivered at community level through community agents (beyond the health facilities)	Yes	2007
	Pre-referral treatment with quinine or artemether IM or artesunate suppositories	Yes	2000	Uncomplicated malaria cases are admitted	No	–
	Oversight regulation of case management in the private sectors	Yes	2000			
	RDTs used at community level	Yes	2006			

Results of therapeutic efficacy tests

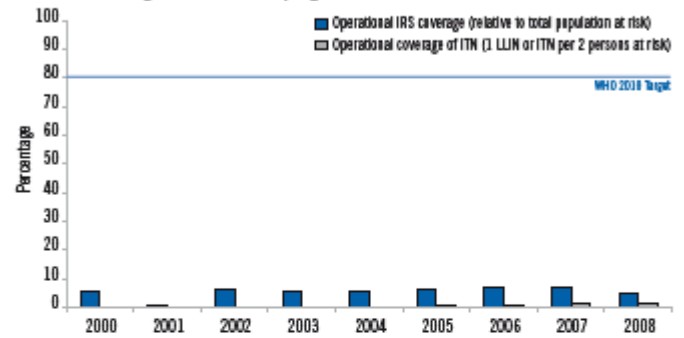
Antimalarial policy	Type of medicine	Year adopted	Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25% 75%	
First-line treatment of <i>P. falciparum</i> (unconfirmed)	CQ + PQ	2007							
First-line treatment of <i>P. falciparum</i> (confirmed)	AS + SP	2007							
Treatment failure of <i>P. falciparum</i>	–	–							
Treatment of severe malaria	AM, QN	2007							
Treatment of <i>P. vivax</i>	CQ + PQ(14d)	2007							

III. IMPLEMENTING MALARIA CONTROL

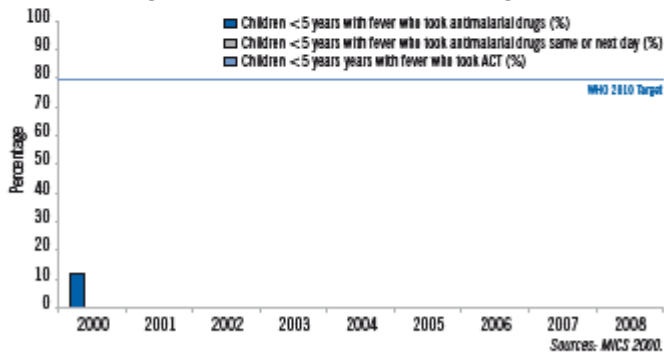
Coverage of ITN: survey data



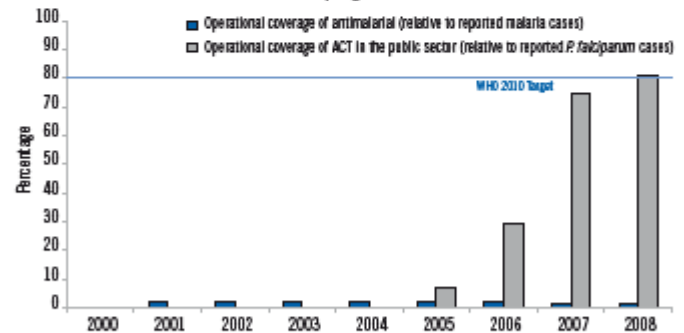
Coverage of IRS and ITN: programme data



Access by febrile children to effective treatment: survey data



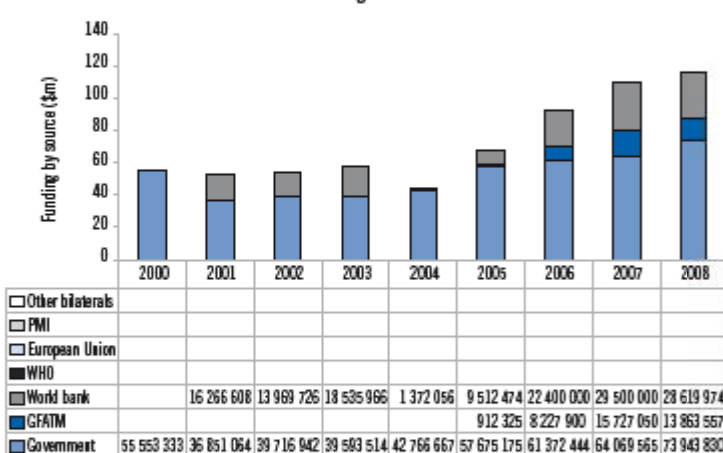
Access to effective treatment: programme data



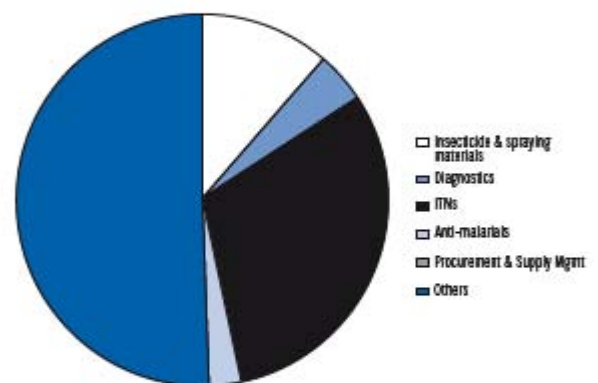
Year	Pregnant women who slept under any net (%)	Pregnant women who slept under an ITN (%)	Children < 5 years with fever (%)	Febrile children < 5 years who sought treatment in HF (%)	Number of households protected by IRS	Number of people protected by IRS	Number of ITNs and/or LLINs	Number of 1st-line treatment courses received	Number of ACT treatment courses received
2000			-	-		51 650 476			
2001						7 787 823	175 000	2 085 484	
2002						63 575 991	90 000	1 842 019	
2003						50 754 459	230 000	1 869 403	
2004						52 118 040	1 200 000	1 915 363	
2005			-	-		62 935 123	2 720 000	1 816 342	57 700
2006						69 457 913	3 950 000	1 780 777	242 300
2007						70 853 795	7 000 000	1 508 927	550 000
2008						53 773 347	7 240 000	1 532 497	622 000

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 2005-06
Treatment	MICS 2000
Use of health services	DHS 2005

INDONESIA

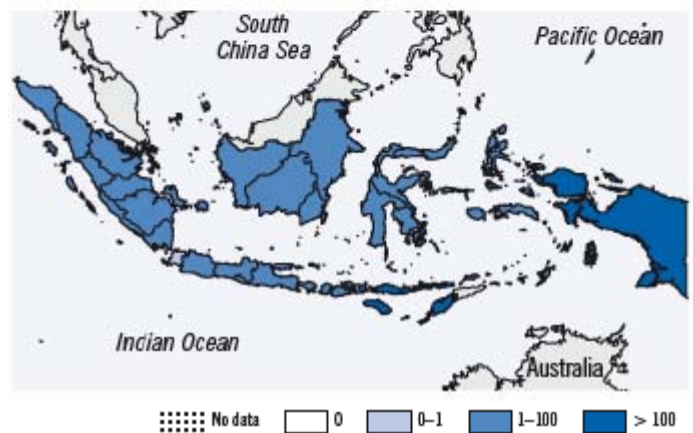
Malaria transmission is higher in the forest areas, particularly in the eastern part of the country, where about 113 million people of the 214 million total population at risk live. The number of reported cases decreased from 2.8 million in 2001 to 1.2 million in 2008. Only 20% of the reported cases were confirmed, of which nearly 50% were due to *P. falciparum*. Inpatient data are incomplete, so that trends in admissions or deaths cannot be assessed. Widescale vector control against malaria was not reported, other than the delivery of 2 million LLINs in 2006 and 250 000 conventional ITNs in 2007. IRS implementation is not recorded consistently, although it remains a national policy. The programme delivered 327 000 ACT courses in 2008, sufficient to treat all confirmed *P. falciparum* cases in the public sector. In the 2008 demographic and health survey, 65% of households had at least one ITN and 68% of children under 5 had slept under an ITN the previous night. External funding for malaria control appears to have increased, from less than US\$ 2 million in 2000 to more than US\$ 15 million in 2008, mainly from the Global Fund, United Nations agencies and the Government.

I. EPIDEMIOLOGICAL PROFILE

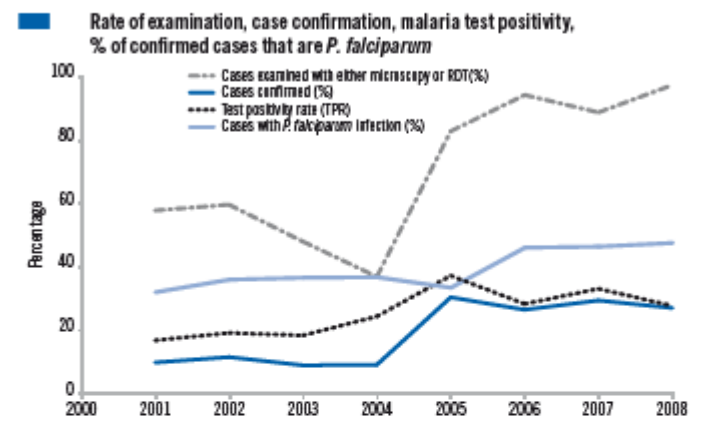
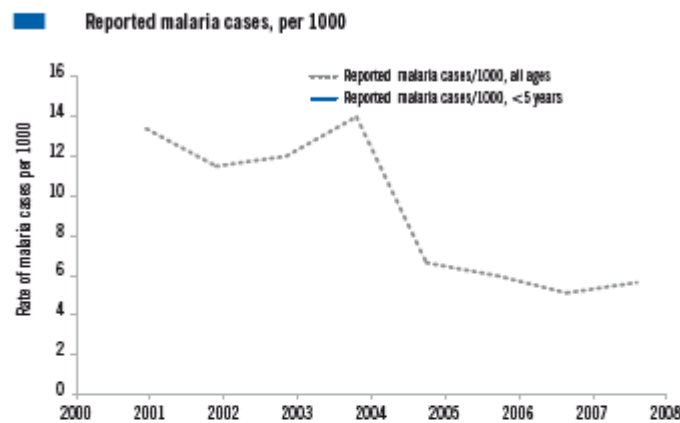
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	227 345	
< 5 years	20 891	9
≥ 5 years	206 454	91
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	83 536	37
Low transmission (0–1/1000)	30 760	14
Malaria-free (0 cases)	113 049	50
Rural population	110 149	48
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>acoitus</i> , <i>balabacensis</i> , <i>bancrofti</i> , <i>barbirostris</i> , <i>farauti</i> , <i>fluvialis</i> , <i>karwari</i> , <i>koliensis</i> , <i>letifer</i> , <i>maculatus</i> , <i>minimus</i> , <i>nigerimus</i> , <i>punctulatus</i> , <i>subpictus</i> , <i>sundaicus</i> , <i>umbrosus</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

Stratification of burden (reported cases, per 1000)

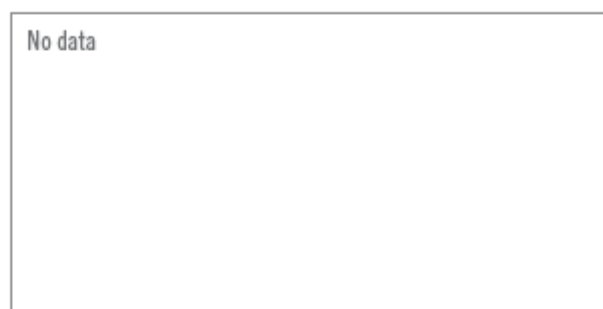


Trends in malaria morbidity and mortality

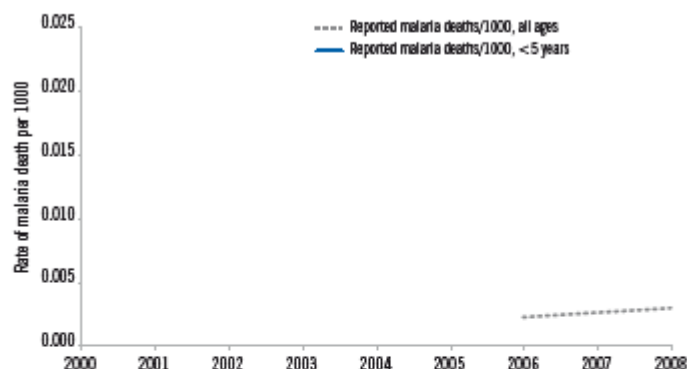


Year	Reported malaria cases, all ages	Reported malaria cases, < 5 years	All-cause outpatient consultations, all ages	All-cause outpatient consultations, < 5 years	Examined	Positive	<i>P. falciparum</i>	Reporting completeness of outpatient health facilities (%)	Reporting completeness of districts (%)
2000									
2001	2 776 477				1 604 573	267 592	85 596		
2002	2 416 039				1 440 320	273 793	98 430		
2003	2 554 223				1 224 232	223 074	81 591		
2004	3 016 262				1 109 801	268 852	98 729		
2005	1 445 831				1 197 621	437 323	146 209		
2006	1 320 581				1 246 324	347 597	160 147		
2007	1 140 424				1 012 681	333 793	155 050		
2008	1 275 192				1 243 744	343 048	163 222		

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										
2001										
2002							88 441			
2003							81 943			
2004							99 615			
2005							85 567			
2006			55 398		494	494	84 214			
2007										
2008					669		92 917			

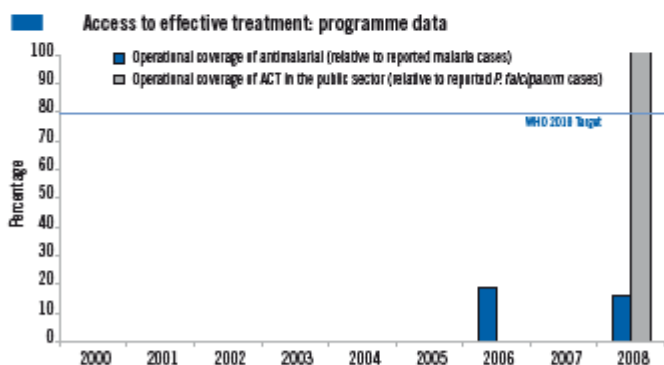
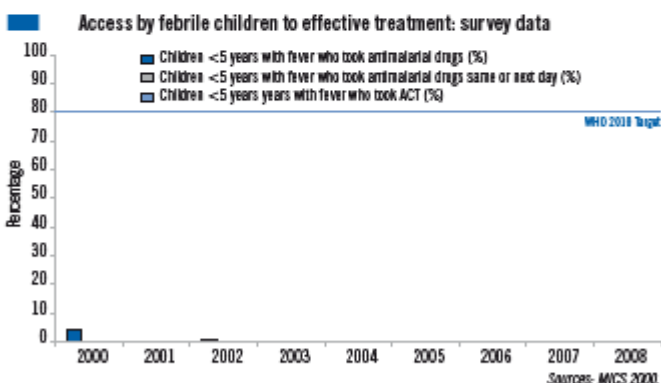
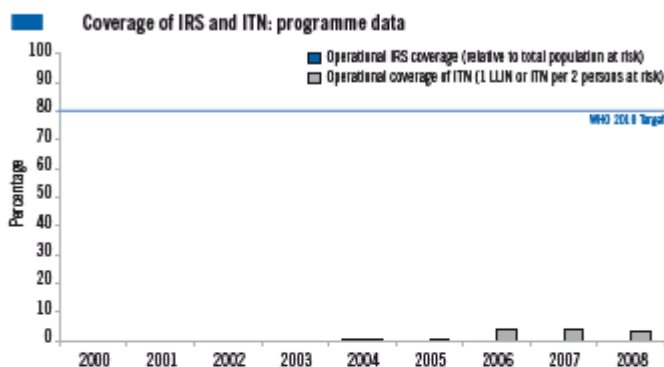
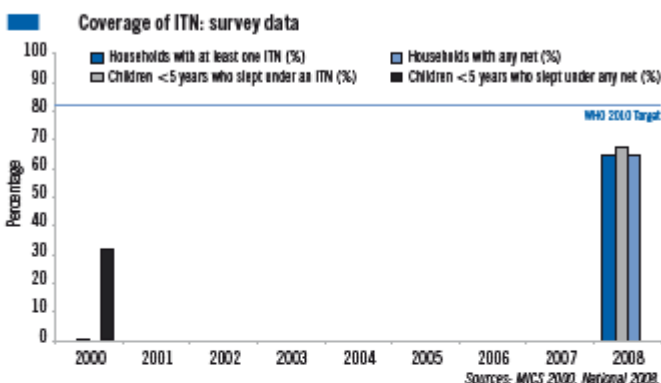
II. INTERVENTION POLICIES AND STRATEGIES

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

Results of therapeutic efficacy tests

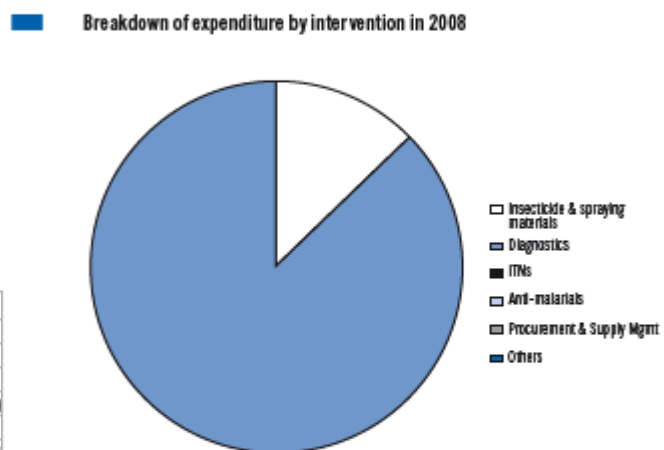
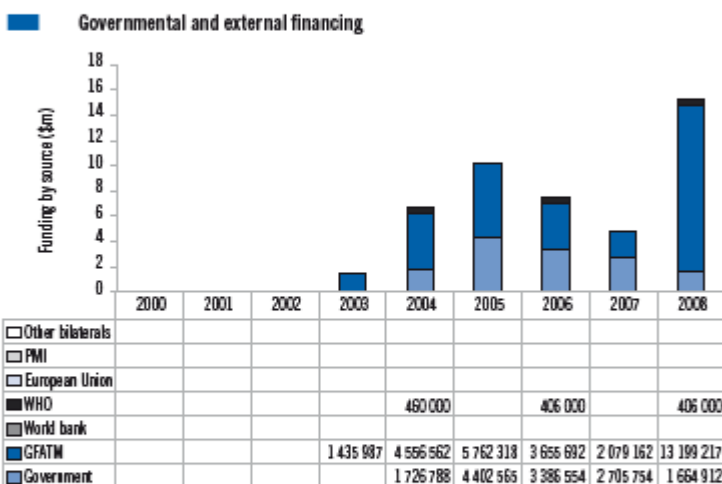
Antimalarial policy	Type of medicine	Year adopted	Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25% 75%	
First-line treatment of <i>P. falciparum</i> (unconfirmed)	CQ+PQ	2004							
First-line treatment of <i>P. falciparum</i> (confirmed)	DHA-PPQ, AS+AQ+PQ	2009							
Treatment failure of <i>P. falciparum</i>	QN+D+PQ	2004							
Treatment of severe malaria	AM, QN	2004							
Treatment of <i>P. vivax</i>	CQ+PQ(14d)	2004							

III. IMPLEMENTING MALARIA CONTROL



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									
2002									
2003									
2004						749 500	155 000		
2005									
2006							2 000 000	250 000	
2007					40 000		250 000		
2008					1 383			338 629	327 440

IV. FINANCING MALARIA CONTROL



V. SOURCE OF INFORMATION

PROGRAMME DATA		SURVEY AND OTHER DATA	
Reported cases	Surveillance data	Insecticide-treated nets (ITN)	MICS 2000
Operational coverage of ITNs, IRS and access to medicines	Programme report	Treatment	MICS 2000, DHS 2002-03
Financial data	Programme report	Use of health services	DHS 2002

KENYA

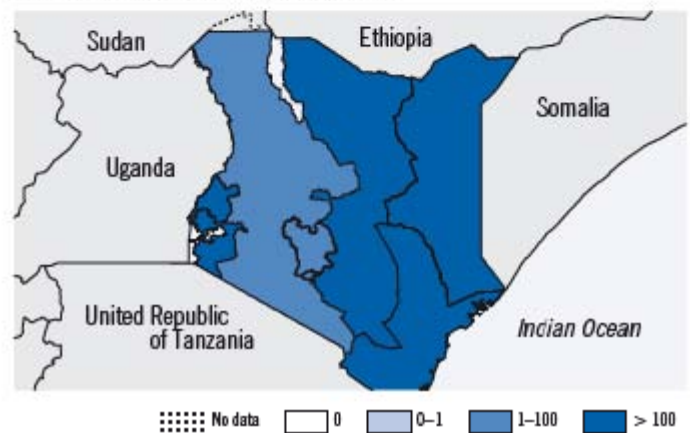
Kenya had an estimated 15 million malaria cases in 2006. The majority are due to *P. falciparum*. Almost all the reported 9 million suspected malaria cases in 2007 were unconfirmed. The number of reported cases increased between 2001 and 2007; it is not known whether this represents improved reporting 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

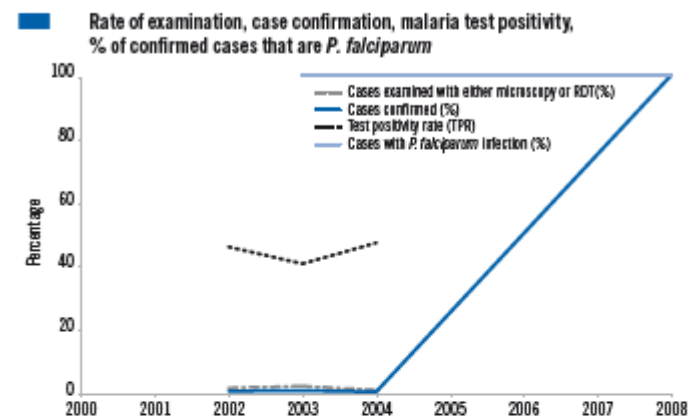
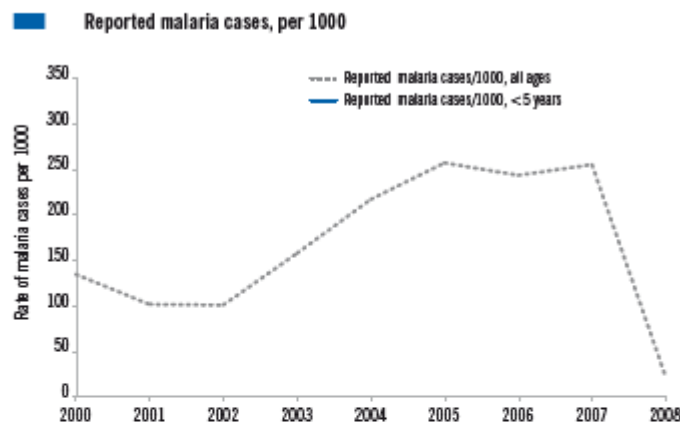
Population, endemicity and malaria burden

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)

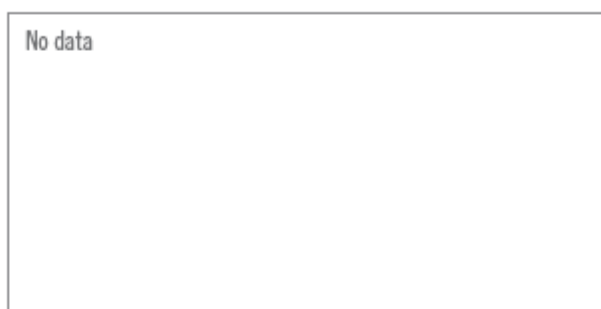


Trends in malaria morbidity and mortality

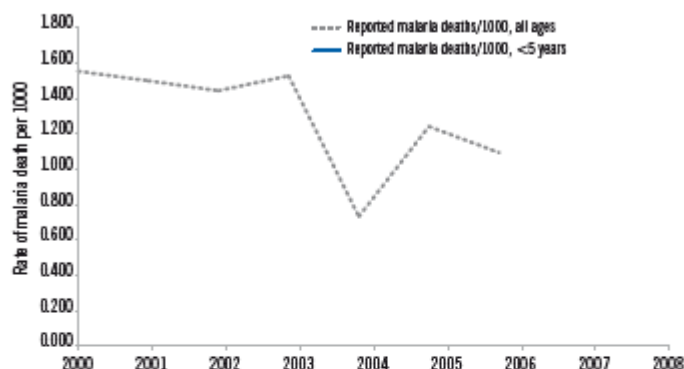


Year	Reported malaria cases, all ages	Reported malaria cases, < 5 years	All-cause outpatient consultations, all ages	All-cause outpatient consultations, < 5 years	Examined	Positive	<i>P. falciparum</i>	Reporting completeness of outpatient health facilities (%)	Reporting completeness of districts (%)
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



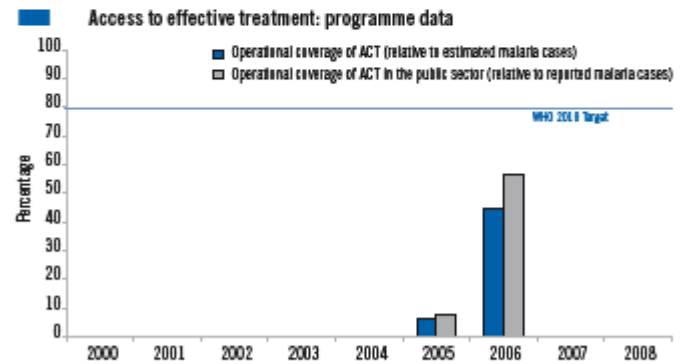
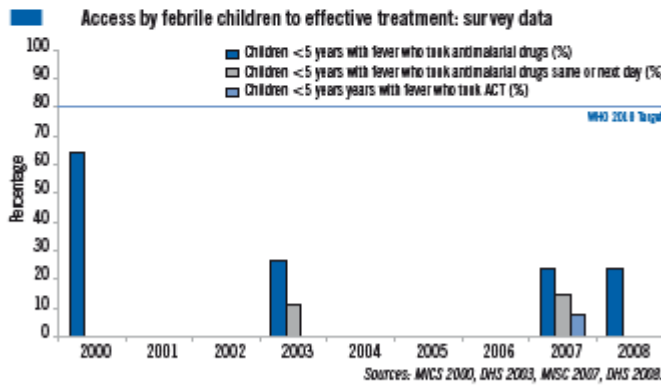
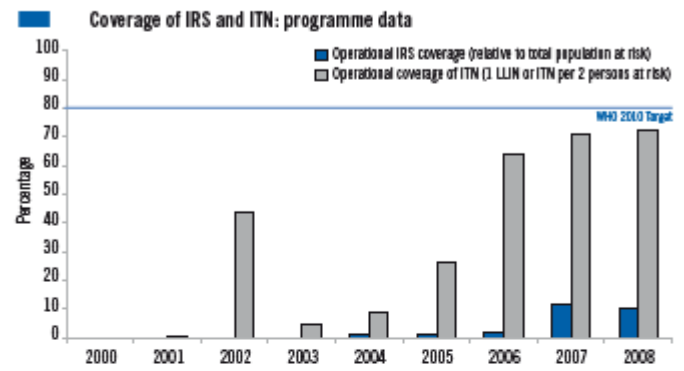
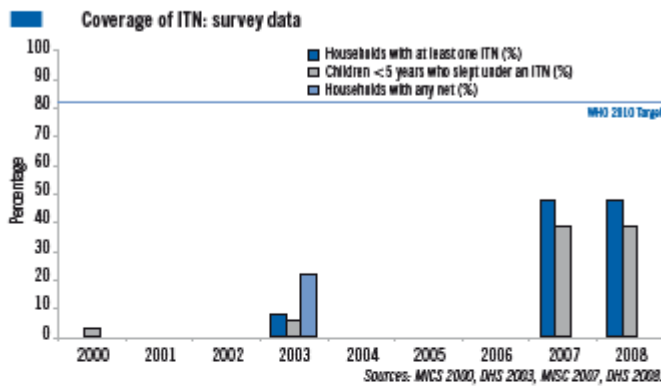
Year	Reported malaria admissions, all ages	Reported malaria admissions, < 5 years	All-cause admissions, all ages	All-cause admissions, < 5 years	Reported malaria deaths, all ages	Reported malaria deaths, < 5 years	All-cause deaths, all ages	All-cause deaths, < 5 years	Reporting completeness of inpatient 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	Yes	Year	OPTIONAL POLICIES / STRATEGIES	Yes	Year
		or No	adopted		or No	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	–			

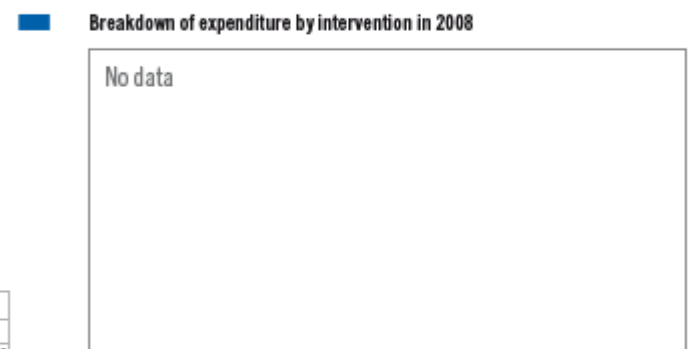
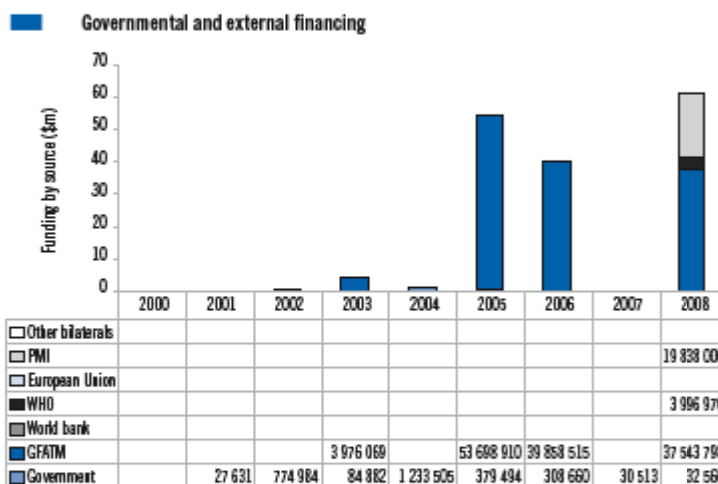
Antimalarial policy	Type of medicine	Year adopted	Results of therapeutic efficacy tests					
			Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25% 75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AL	2004						
First-line treatment of <i>P. falciparum</i> (confirmed)	AL	2004						
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



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



V. SOURCE OF INFORMATION

PROGRAMME DATA	SURVEY AND OTHER DATA
Reported cases	Surveillance data
Operational coverage of ITNs, IRS and access to medicines	Insecticide-treated nets (ITN)
Financial data	Treatment
	Use of health services

MICS 2000, DHS 2003, MIS 2007, DHS 2008
MICS 2000, DHS 2003, MIS 2007, DHS 2008
DHS 2003

MADAGASCAR

Transmission occurs all year round in the north, with seasonal peaks between September and June elsewhere. About 70% of the population live in low-transmission areas, prone to epidemics, whereas the remainder inhabit high-transmission areas. The reported number of malaria cases dropped from an average of 1.4 million in 2001–2006 to only 352 000 cases in 2008 (76% decrease); only 89 000 cases were confirmed. The percentage of suspected cases tested increased from 2% in 2003 to 85% in 2008 as a result of the introduction of RDTs in 2007. The number of inpatient malaria cases also decreased, from an average of 10 283 during 2001–2006 to 5367 in 2008 (a decrease of 47%). Similarly, the number of malaria deaths during this period decreased from an average of 665 to 276 (decrease of 58%). In spite of limitations due to under reporting, the marked decreases in numbers of cases and deaths perhaps reflect the growing use of ITN, IRS and ACTs. The national malaria control programme distributed nearly 3.6 million LLINs during the period 2006–2008, covering half the target population. IRS has also increased since 2003, covering 1.3 million households and protecting 6.5 million people at risk (34%) in 2008. The national malaria control programme reported that 1 167 480 malaria cases received ACT. In a national household survey in 2008, 59% of households had an ITN and 60% of children under 5 had slept under an ITN the previous night. Funding for malaria control has increased every year, from about US\$ 2 million in 2004 to over US\$ 23 million in 2008, mainly from the Global Fund, United Nations agencies, the United States President's Malaria Initiative and other bilateral agencies.

I. EPIDEMIOLOGICAL PROFILE

Population, endemicity and malaria burden

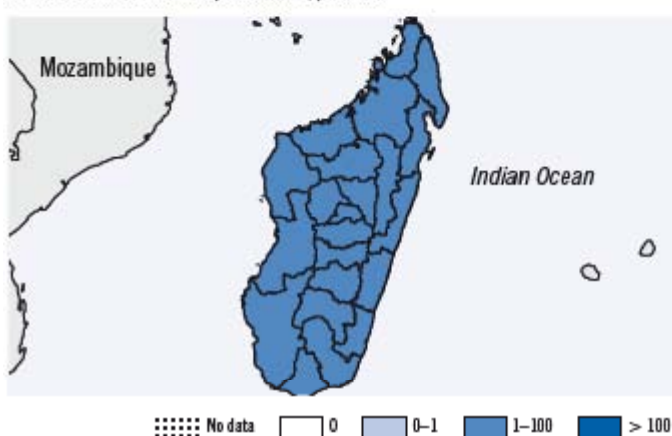
Population (in thousands)	2008	%
All age groups	19 111	
< 5 years	3 060	16
≥ 5 years	16 051	84
Population by malaria endemicity (in thousands)		
High transmission (≥ 1/1000)	5 758	30
Low transmission (0–1/1000)	13 352	70
Malaria-free (0 cases)	0	0
Rural population	13 480	71

Vector and parasite profiles

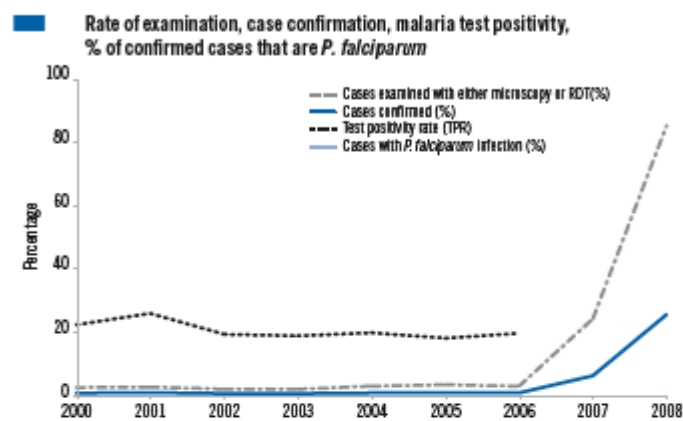
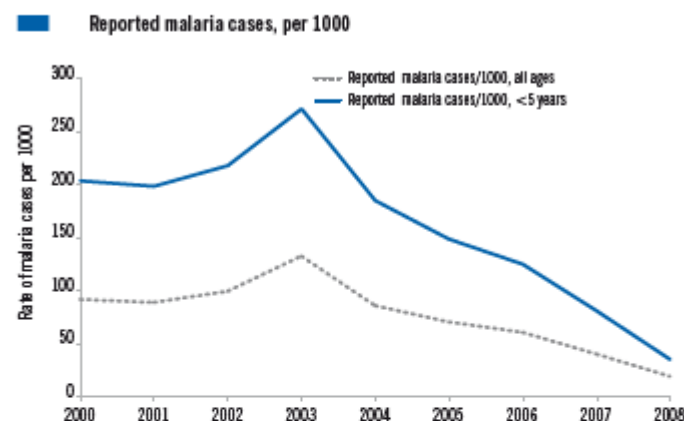
Major *Anopheles* species: *gambiae*, *arabiensis*, *funestus*, *coustani*, *flavicosta*, *merus*, *pharoensis*

Plasmodium species: *falciparum*, *vivax*

Stratification of burden (reported cases, per 1000)

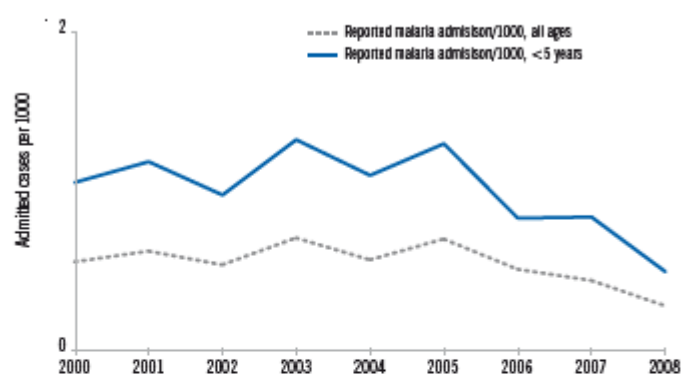


Trends in malaria morbidity and mortality

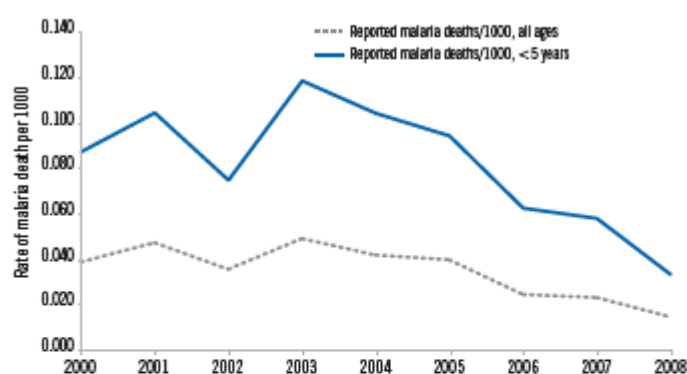


Year	Reported malaria cases, all ages	Reported malaria cases, < 5 years	All-cause outpatient consultations, all ages	All-cause outpatient consultations, < 5 years	Examined	Positive	<i>P. falciparum</i>	Reporting completeness of outpatient health facilities (%)	Reporting completeness of districts (%)
2000	1 392 483	553 350	7 425 845	2 435 584	31 575	6 946		100	85
2001	1 386 291	549 457	7 163 740	2 307 873	33 354	8 538		99	81
2002	1 598 919	612 724	8 189 035	3 641 821	27 752	5 272		98	75
2003	2 198 297	774 142	11 693 122	3 588 525	37 333	6 909		96	85
2004	1 458 408	534 201	8 091 929	2 451 234	39 174	7 638		93	87
2005	1 229 385	434 849	7 296 934	2 118 281	37 943	6 753		92	84
2006	1 087 563	370 356	6 991 184	1 957 387	29 318	5 689		85	85
2007	736 194	243 638	6 900 024	1 859 232	175 595	43 674		86	90
2008	352 520	106 090	6 809 115	1 793 241	299 000	89 138		73	73

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	8 514	2 883	84 020	12 528	591	238	4 023	1 107		
2001	9 826	3 298	88 853	12 177	742	290	4 300	1 078		
2002	8 730	2 758	80 604	11 376	575	211	3 897	1 975		
2003	11 795	3 790	106 283	15 176	817	339	4 849	1 308		
2004	9 753	3 192	93 960	12 085	715	302	4 148	1 058		
2005	12 346	3 819	108 313	13 570	699	277	4 229	1 021		
2006	9 246	2 479	88 303	10 387	441	186	3 357	717		
2007	8 190	2 537	102 157	12 794	428	175	3 721	793		
2008	5 367	1 521	118 882	9 094	276	102	2 830	566		

II. INTERVENTION POLICIES AND STRATEGIES

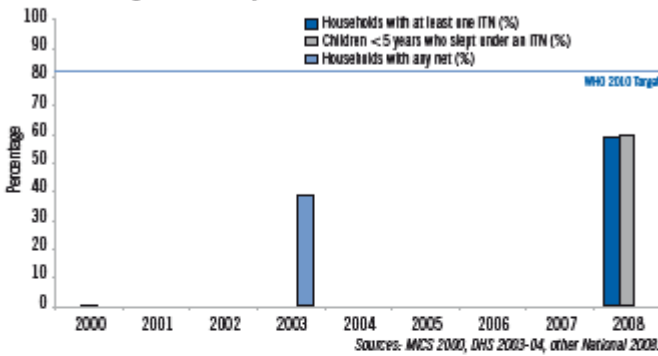
Intervention	WHO-RECOMMENDED POLICIES / STRATEGIES			OPTIONAL POLICIES / STRATEGIES		
	Yes or No	Year adopted		Yes or No	Year adopted	
Insecticide-treated nets (ITN)	Distribution of ITN/LLINs – Free	Yes	2004	Distribution – Antenatal care	Yes	2005
	Targeting all age groups	Yes	2009	Distribution – EPI routine and campaign	Yes	2007
				Targeting children < 5 years and pregnant women	Yes	2000
				ITN distribution is subsidized	Yes	2000
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	Yes	1998	Insecticide-resistance management implemented	Yes	1998
	DDT is used for IRS (public health) only	No	–	Where IRS is conducted, other options are also implemented, e.g. ITN	Yes	1998
				IRS is used for prevention and control of epidemics	Yes	1998
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	Yes	2006			
Case management	Oral artemisinin monotherapies banned (prohibited from registration or removed from the system)	Yes	2005	Parasitological confirmation for patients ≥ 5 years only	No	–
	Parasitological confirmation for patients of all ages	Yes	2006	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 in 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	No	–	Uncomplicated malaria cases are admitted	No	–
	Oversight regulation of case management in the private sectors	–	–			
	RDTs used at community level	No	–			

Results of therapeutic efficacy tests

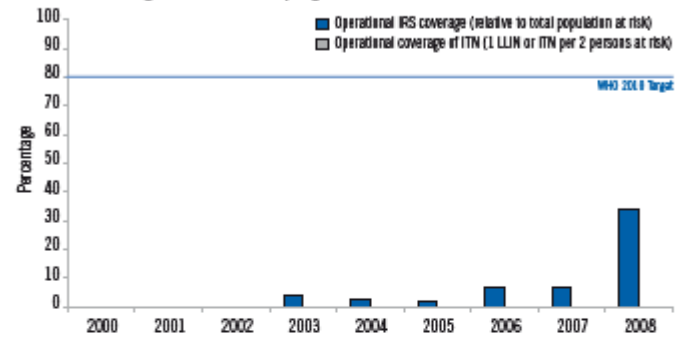
Antimalarial policy	Type of medicine	Year adopted	Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AS+AQ	2006	2006–2007	10	0	0	8.7	0	6.9
First-line treatment of <i>P. falciparum</i> (confirmed)	AS+AQ	2006							
Treatment failure of <i>P. falciparum</i>	QN(7d)	2006							
Treatment of severe malaria	QN(7d)	2006							
Treatment of <i>P. vivax</i>	–	–							

III. IMPLEMENTING MALARIA CONTROL

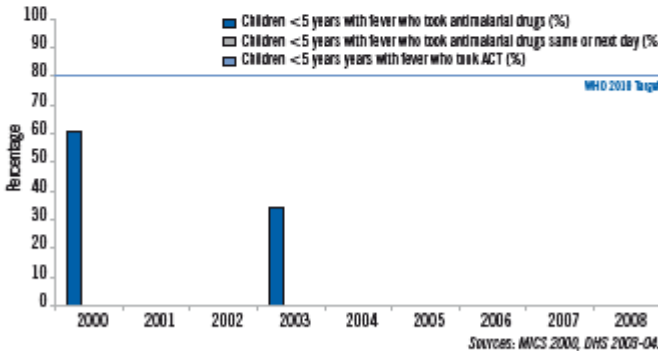
Coverage of ITN: survey data



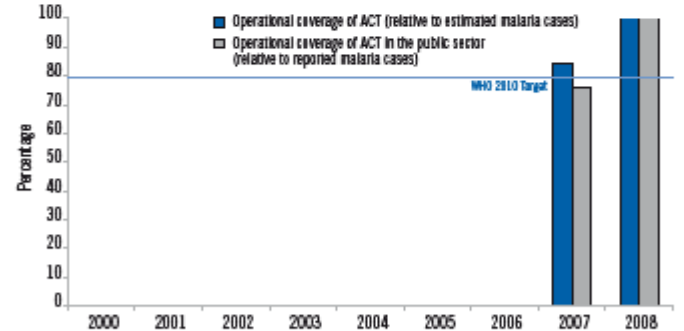
Coverage of IRS and ITN: programme data



Access by febrile children to effective treatment: survey data



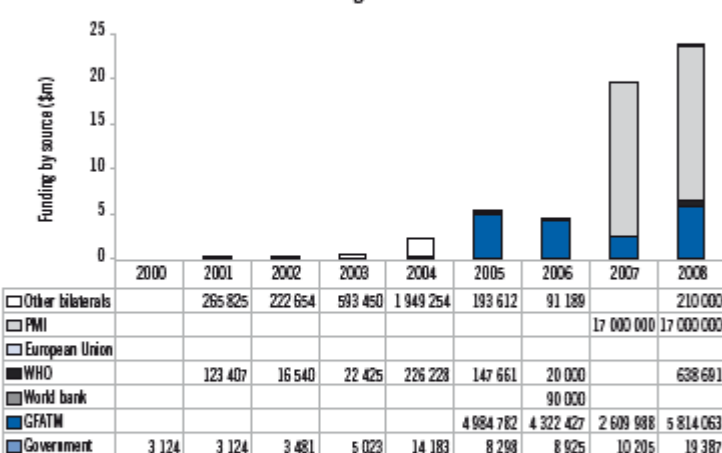
Access to effective treatment: programme data



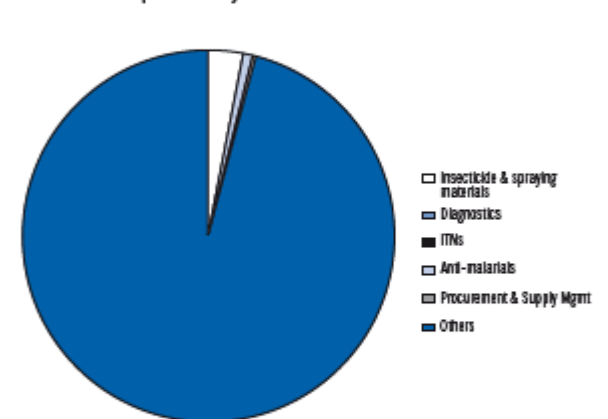
Year	Pregnant women who slept under any net (%)	Pregnant women who slept under an ITN (%)	Children < 5 years with fever (%)	Febrile children < 5 years who sought treatment in HF (%)	Number of households protected by IRS	Number of people protected by IRS	Number of ITNs and/or LLINs	Number of 1st-line treatment courses received	Number of ACT treatment courses received
2000			-	-					
2001							41 060		
2002							77 139		
2003			-	-	143 617	736 145	115 051		
2004					100 907	485 395	488 700		
2005					84 030	409 155	869 450		
2006					251 100	1 250 000	1 614 187		
2007					248 269	1 241 344	3 359 244		
2008			-	-	1 312 811	6 564 056	907 739		

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	Insecticide-treated nets (ITN)	MICS 2000, DHS 2003-04, Other Nat.
Operational coverage of ITNs, IRS and access to medicines	Programme report	Treatment	MICS 2000, DHS 2003-04
Financial data	Programme report	Use of health services	DHS 2003

SURVEY AND OTHER DATA

MALAWI

Malaria is endemic in all parts of the country, with seasonal peaks between December and June. The majority of cases are caused by *P. falciparum*, but most suspected cases are not parasitologically tested. The numbers of malaria cases and deaths reported through the surveillance system were either stable or showed an increasing trend. It is not known whether this is due to improved reporting or an increased incidence. The national malaria control programme distributed over 4.5 million ITNs between 2006 and 2008, of which about 1.2 million were LLINs. In the 2006 multiple indicator cluster survey, 38% of households had at least an ITN, and 25% of children under 5 had slept under an ITN the previous night. Only 25% of febrile children under 5 years were treated with any antimalarial medicine. Although ACT was adopted as the recommended method of treatment in 2007, the national malaria control programme did not report delivery of ACT in recent years. Funding for malaria has increased significantly over the past 3 years, reaching a total of US\$ 49 million in 2007 and US\$ 41 million in 2008. Most of the funding was provided by the Global Fund, the United States President's Malaria Initiative and United Nations agencies.

I. EPIDEMIOLOGICAL PROFILE

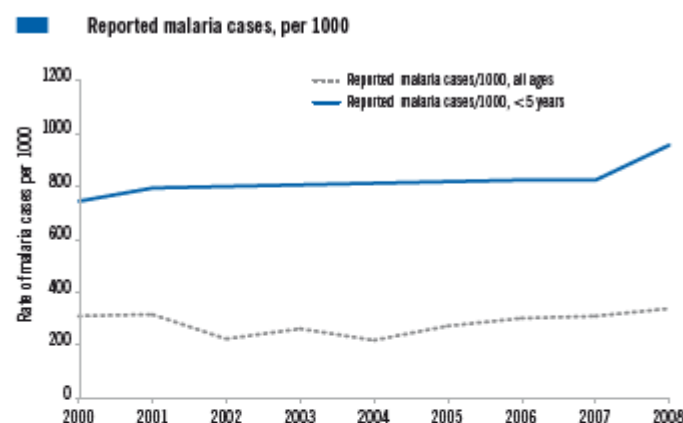
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	14 846	
< 5 years	2 591	17
≥ 5 years	12 255	83
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	14 846	100
Low transmission (0–1/1000)	0	0
Malaria-free (0 cases)	0	0
Rural population	12 061	81
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>gambiae</i> , <i>funestus</i> , <i>coustani</i> , <i>paludis</i> , <i>pharoensis</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

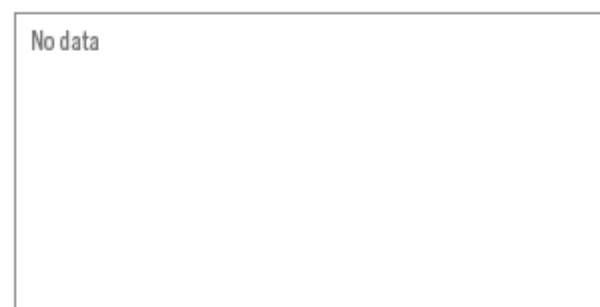
Stratification of burden (reported cases, per 1000)



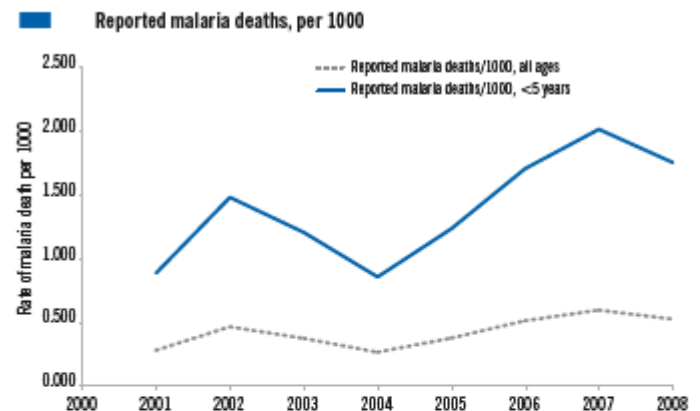
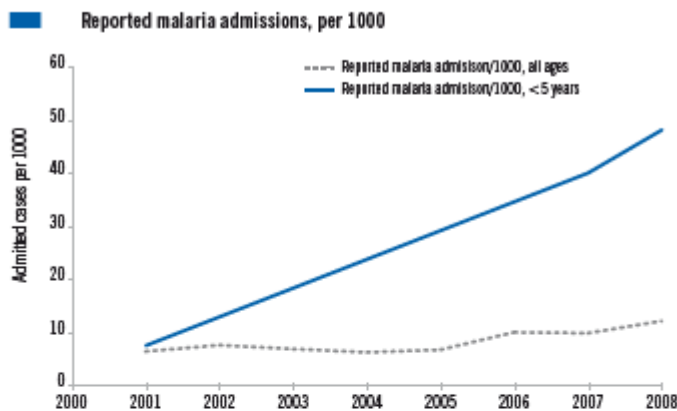
Trends in malaria morbidity and mortality



Rate of examination, case confirmation, malaria test positivity, % of confirmed cases that are *P. falciparum*



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	3 646 212	1 658 012							
2001	3 823 796	1 815 628							
2002	2 784 001								
2003	3 358 960								
2004	2 871 098								
2005	3 688 389		15 753 331						
2006	4 204 468	2 065 004	14 014 893						
2007	4 442 197	2 096 425	6 172 195						
2008	4 986 779	2 473 208	10 183 764						



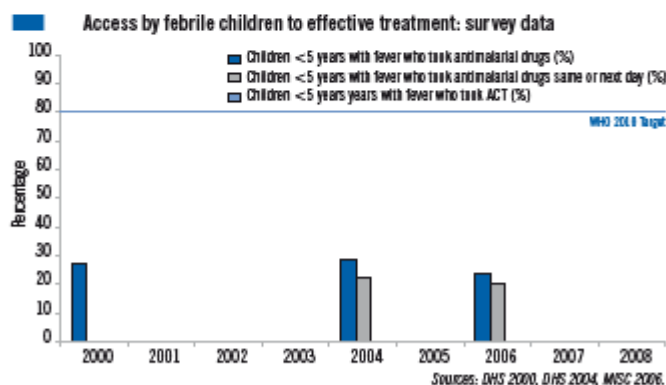
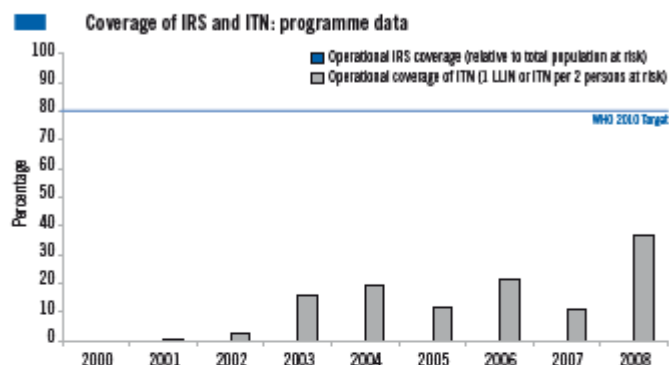
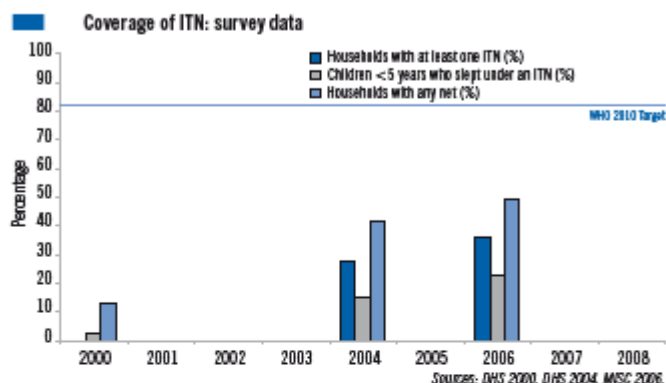
Year	Reported malaria admissions, all ages	Reported malaria admissions, < 5 years	All-cause admissions, all ages	All-cause admissions, < 5 years	Reported malaria deaths, all ages	Reported malaria deaths, < 5 years	All-cause deaths, all ages	All-cause deaths, < 5 years	Reporting completeness of inpatient health facilities (%)	Reporting completeness of districts (%)
2000										
2001	78 862	17 466			3 355	2 027				
2002	96 074				5 775	3 465				
2003	89 406				4 767	2 872				
2004	84 044				3 457	2 074				
2005	92 517				5 070	3 042				
2006	141 710				7 132	4 279				
2007	143 110	102 392	348 980		8 541	5 137				
2008	181 248	125 096	436 272		7 748	4 546				

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	2002
	Targeting all age groups	Yes	2008	Distribution – EPI routine and campaign	No	–
				Targeting children < 5 years and pregnant women	Yes	2002
				ITN distribution is subsidized	–	–
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	2005
				IRS is used for prevention and control of epidemics	No	–
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	Yes	–			
Case management	Oral artemisin in monotherapies banned (prohibited from registration or removed from the system)	Yes	2006	Parasitological confirmation for patients ≥ 5 years only	–	–
	Parasitological confirmation for patients of all ages	No	–	Malaria diagnosis is free of charge in the public sector	–	–
	ACT is free of charge for < 5 years old in the public sector	Yes	2007	ACT is free of charge for patients ≥ 5 years in the public sector	–	–
	Diagnosis of malaria of inpatients is based on parasitological confirmation	–	–	ACT is delivered at community level through community agents (beyond the health facilities)	–	–
	Pre-referral treatment with quinine or artemether IM or artesunate suppositories	Yes	–	Uncomplicated malaria cases are admitted	–	–
	Oversight regulation of case management in the private sectors	–	–			
	RDTs used at community level	–	–			

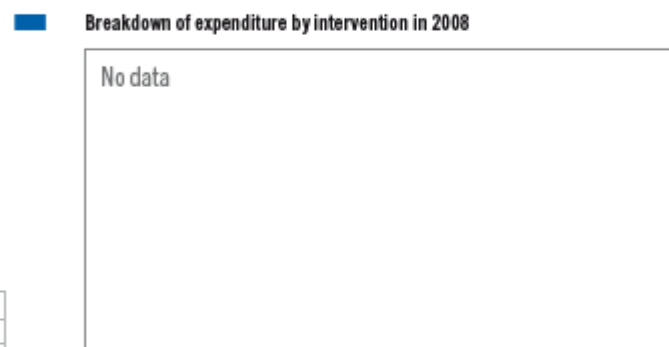
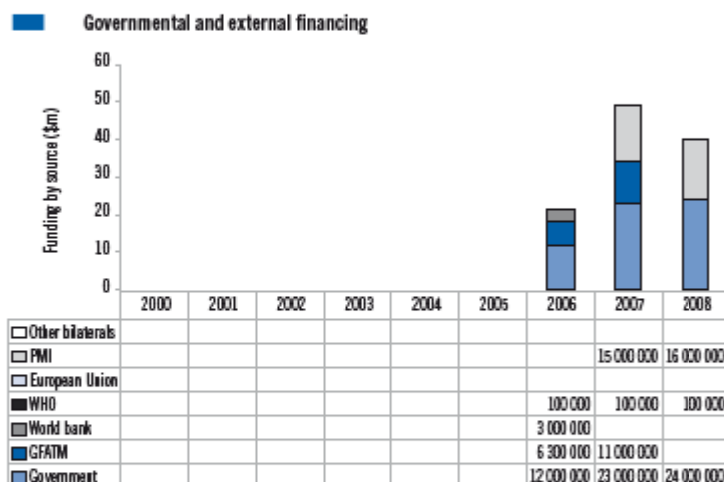
Antimalarial policy	Type of medicine	Year adopted	Results of therapeutic efficacy tests						
			Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AL	2007	2005	1	7.1	7.1	7.1	7.1	7.1
First-line treatment of <i>P. falciparum</i> (confirmed)	AL	2007							
Treatment failure of <i>P. falciparum</i>	AS + AQ	2007	2005	2	1.8	0	3.599	0	3.599
Treatment of severe malaria	QN(7d)	2007							
Treatment of <i>P. vivax</i>	–	–							

III. IMPLEMENTING MALARIA CONTROL



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							46 062		
2002							185 968		
2003							1 029 884		
2004	19	15	-	-			1 295 498		
2005							815 620	27 903 000	
2006			-	-			1 508 735	27 903 000	
2007							673 238		
2008							2 354 094		

IV. FINANCING MALARIA CONTROL



V. SOURCE OF INFORMATION

PROGRAMME DATA	SURVEY AND OTHER DATA
Reported cases	Surveillance data
Operational coverage of ITNs, IRS and access to medicines	Insecticide-treated nets (ITN)
Financial data	Treatment
	Use of health services

DHS 2000, DHS 2004, MICS 2006
DHS 2000, DHS 2004, MICS 2006
DHS 2004

MALI

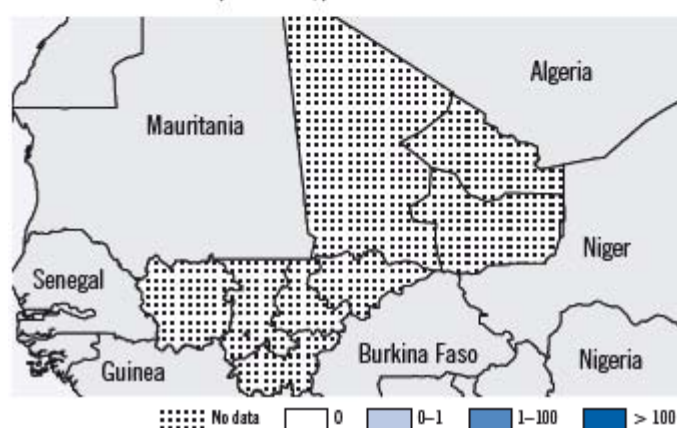
While the entire population is at risk, over 90% of the population live in high-transmission areas. Malaria transmission is more intensive in the southern part of the country, with seasonal peaks between May and November. Almost all cases are caused by *P. falciparum*, but most suspected cases are not parasitologically tested, despite recent improvements in diagnostic services. The number of reported suspected malaria cases has increased in recent years, and the number of reported deaths increased more than twofold between 2001 and 2008. It is not known whether the increase was due to improved reporting or to an increase in incidence. During 2006–2008, the national malaria control programme distributed nearly 3.7 million LLINs, of which 3 million were delivered in the 2007 mass campaign. The programme conducted IRS in 2007, covering 87 000 households and protecting over 405 000 people at risk. Over 2.8 million ACT treatment courses were delivered in 2008, adequate to treat all the malaria cases reported from the public sector. In the 2006 demographic and health survey, 50% of households owned an ITN and 41% of children under 5 had slept under an ITN the previous night. In the 2006 demographic and health survey, 32% of febrile children received any antimalarial medicine, but only 2% received ACT. Although Government expenditure on malaria control is unknown, funding for malaria increased to US\$ 27 million in 2008, mainly from the Global Fund, the World Bank, the United States President's Malaria Initiative, United Nations agencies and other bilateral agencies and nongovernmental organizations.

I. EPIDEMIOLOGICAL PROFILE

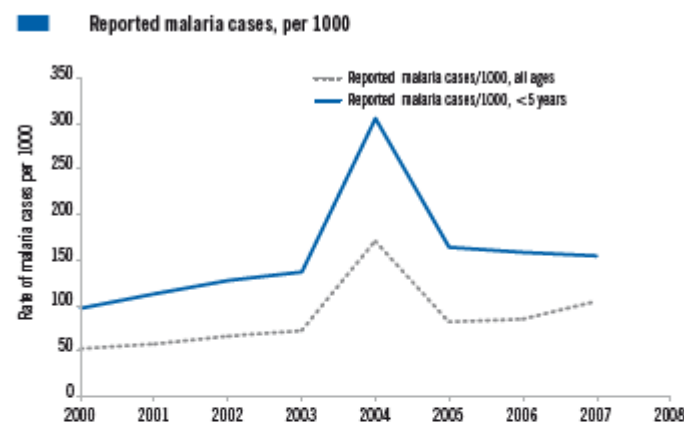
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	12 706	
< 5 years	2 207	17
≥ 5 years	10 499	83
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	11 435	90
Low transmission (0–1/1000)	1 271	10
Malaria-free (0 cases)	0	0
Rural population	8 620	68
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>gambiae</i> , <i>arabiensis</i> , <i>funestus</i> , <i>brochieri</i> , <i>coustani</i> , <i>flavicosta</i> , <i>hancocki</i> , <i>nilii</i> , <i>paludis</i> , <i>pharoensis</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

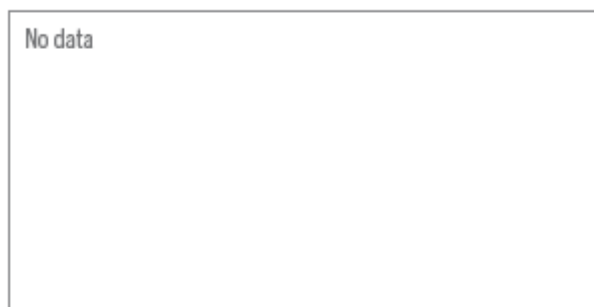
Stratification of burden (reported cases, per 1000)



Trends in malaria morbidity and mortality

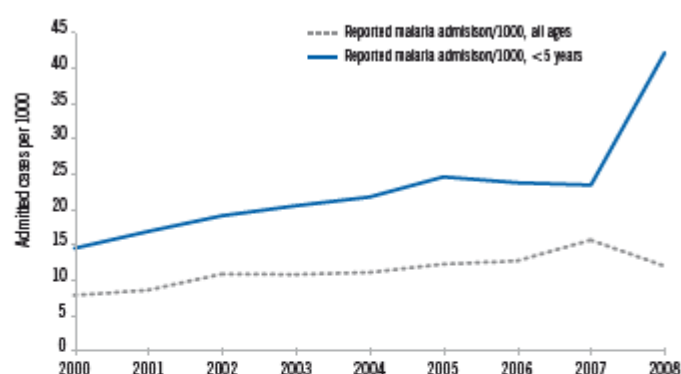


Rate of examination, case confirmation, malaria test positivity, % of confirmed cases that are *P. falciparum*

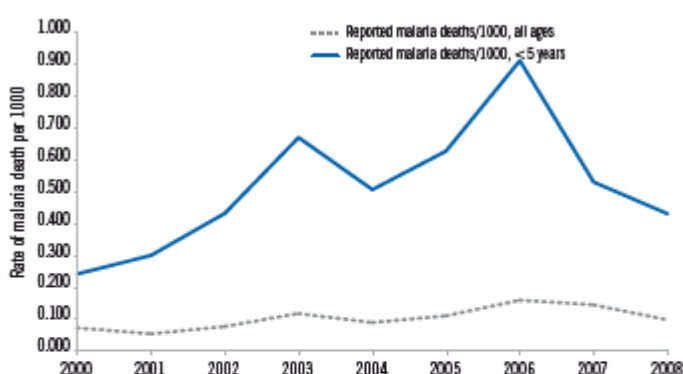


Year	Reported malaria cases, all ages	Reported malaria cases, < 5 years	All-cause outpatient consultations, all ages	All-cause outpatient consultations, < 5 years	Examined	Positive	<i>P. falciparum</i>	Reporting completeness of outpatient health facilities (%)	Reporting completeness of districts (%)
2000	546 634	177 969	1 685 072	548 814					
2001	612 896	211 018	2 065 677	665 692					
2002	723 077	243 390	2 289 524	736 139					
2003	809 428	267 133	2 533 291	794 023					
2004	1 969 214	611 680	2 626 206	815 931					
2005	962 706	335 701	2 652 526	870 359					
2006	1 022 592	332 495	3 126 181	902 043					
2007	1 291 853	332 262	3 442 514	980 295					
2008								33	100

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	81 994	26 695	546 624	177 969	748	444	2 920	966		
2001	91 934	31 653	612 896	211 018	562	562	17 925	7 303		
2002	118 962	36 509	793 077	243 390	826	826	2 561	999		
2003	121 414	40 070	809 428	267 133	1 309	1 309	3 095	1 461		
2004	127 608	43 464	850 723	289 762	1 012	1 012	2 664	1 073		
2005	144 406	50 355	962 706	335 701	1 285	1 285	3 896	1 637		
2006	153 389	49 874	1 022 592	332 495	1 914	1 914	5 132	2 207		
2007	193 778	50 441	1 291 853	336 272	1 782	1 141	3 304	1 563		
2008	151 910	92 997	1 012 730	281 150	1 227	951	1 446	1 446		

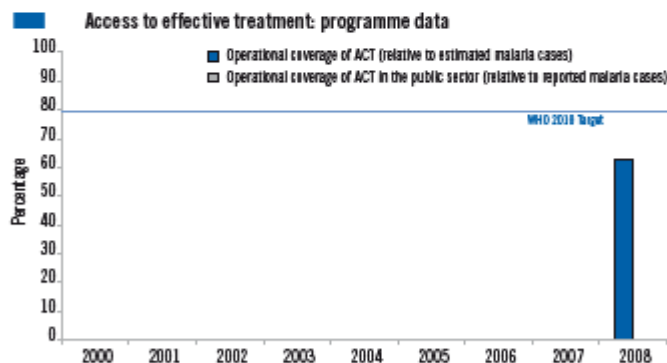
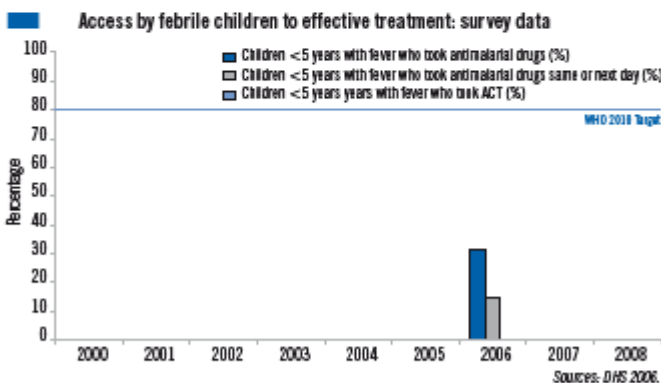
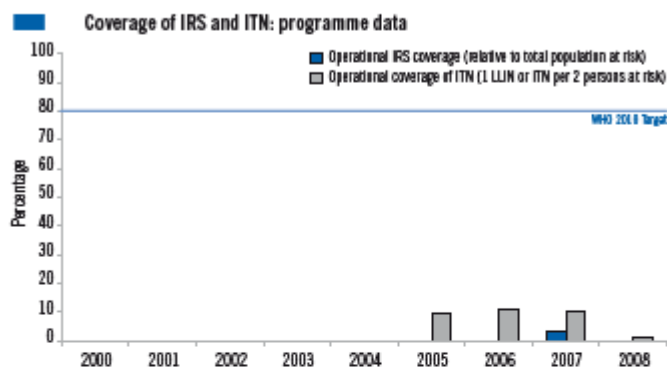
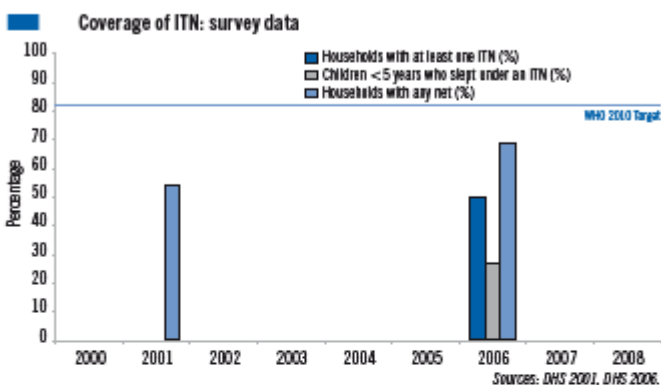
II. INTERVENTION POLICIES AND STRATEGIES

Intervention	WHO-RECOMMENDED 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	2005	Distribution – Antenatal care	Yes	2006
	Targeting all age groups	No	–	Distribution – EPI routine and campaign	Yes	2005
				Targeting children < 5 years and pregnant women	Yes	2006
				ITN distribution is subsidized	Yes	2005
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	Yes	2008	Insecticide-resistance management implemented	Yes	2000
	DDT is used for IRS (public health) only	No	–	Where IRS is conducted, other options are also implemented, e.g. ITN	Yes	2008
				IRS is used for prevention and control of epidemics	Yes	2005
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)	No	–	Parasitological confirmation for patients ≥ 5 years only	No	–
	Parasitological confirmation for patients of all ages	Yes	2008	Malaria diagnosis is free of charge in the public sector	No	–
	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	No	–
	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)	Yes	2005
	Pre-referral treatment with quinine or artemether IM or artesunate suppositories	Yes	2009	Uncomplicated malaria cases are admitted	No	–
	Oversight regulation of case management in the private sectors	No	–			
	RDTs used at community level	Yes	2005			

Results of therapeutic efficacy tests

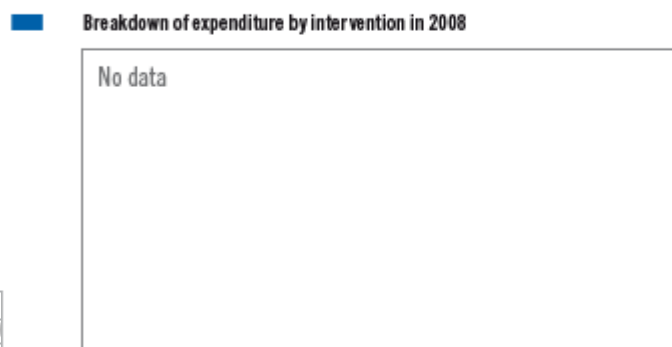
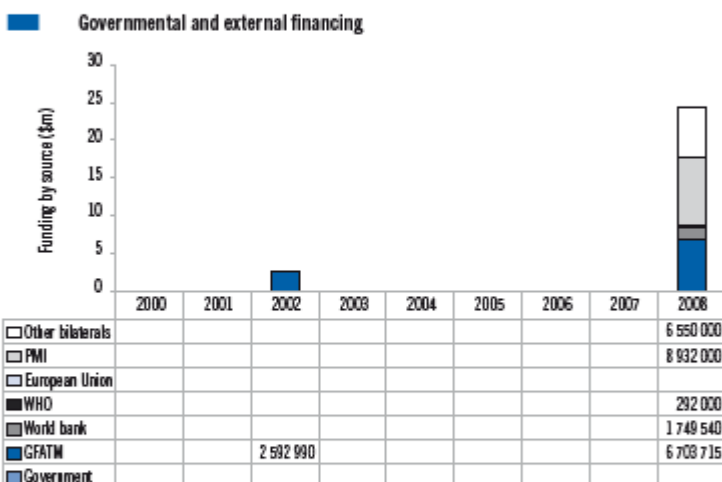
Antimalarial policy	Type of medicine	Year adopted	Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25% 75%	
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AL	2004							
First-line treatment of <i>P. falciparum</i> (confirmed)	AL	2004							
Treatment failure of <i>P. falciparum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

III. IMPLEMENTING MALARIA CONTROL



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			-	-					
2002									
2003									
2004									
2005							572 556		
2006		29	-	-			90 900		
2007					87 198	405 936	2 982 346		
2008							682 461		2 842 500

IV. FINANCING MALARIA CONTROL



V. SOURCE OF INFORMATION

PROGRAMME DATA		SURVEY AND OTHER DATA	
Reported cases	Surveillance data	Insecticide-treated nets (ITN)	DHS 2001, DHS 2006
Operational coverage of ITNs, IRS and access to medicines	Programme report	Treatment	DHS 2001, DHS 2006
Financial data	Programme report	Use of health services	DHS 2006

MOZAMBIQUE

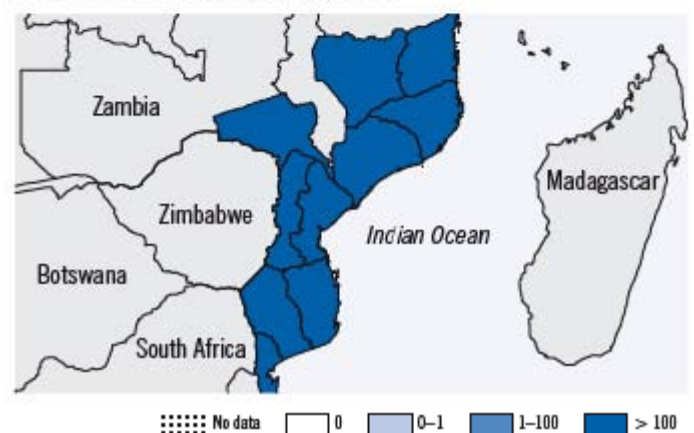
Mozambique had an estimated 9.8 million malaria cases in 2006. Transmission is seasonal, mainly between November and July. Most cases are caused by *P. falciparum*, but most of the reported 4.8 million malaria cases in 2008 were not parasitologically tested. The inpatient data reported for 2001–2006 were inadequate to allow a trend analysis. IRS has been the principal method of mosquito control, covering 2 million households and protecting 6.5 million people at risk in 2008 (36% of people at risk). The national malaria control programme distributed about 4 million LLINs during 2006–2008, adequate to cover 44% of the population at risk. In the 2007 malaria indicator survey, 16% of households owned an ITN and only 7% of children under 5 had slept under an ITN the previous night. The programme delivered over 6.1 million ACT treatment courses in 2007 and 4.8 million in 2008, adequate to treat all reported cases in the public sector. The programme provided no information about funding, but the country has funding from Global Fund round 2 and 6 grants, amounting to US\$ 65 million, from the World Bank and from other donors.

I. EPIDEMIOLOGICAL PROFILE

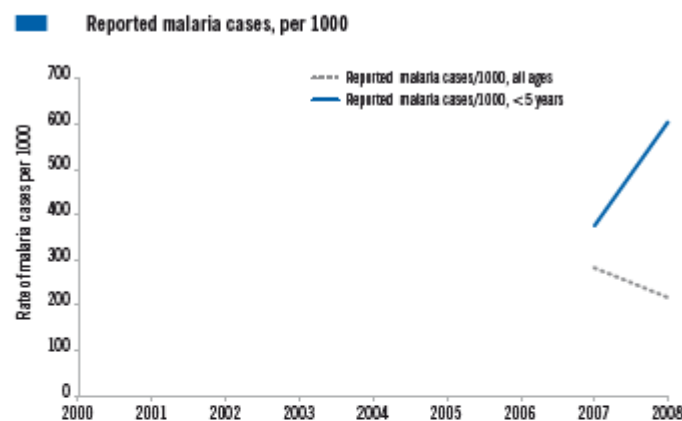
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	22 383	
< 5 years	3 820	17
≥ 5 years	18 562	83
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	22 383	100
Low transmission (0–1/1000)	0	0
Malaria-free (0 cases)	0	0
Rural population	14 133	63
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>gambiae</i> , <i>funestus</i> , <i>s.l.</i> , <i>s.l.</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

Stratification of burden (reported cases, per 1000)



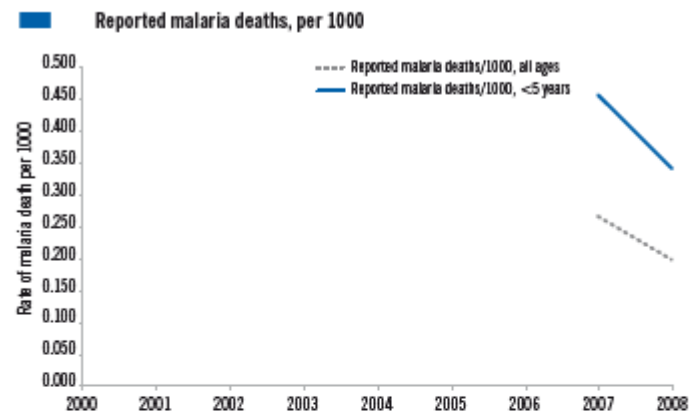
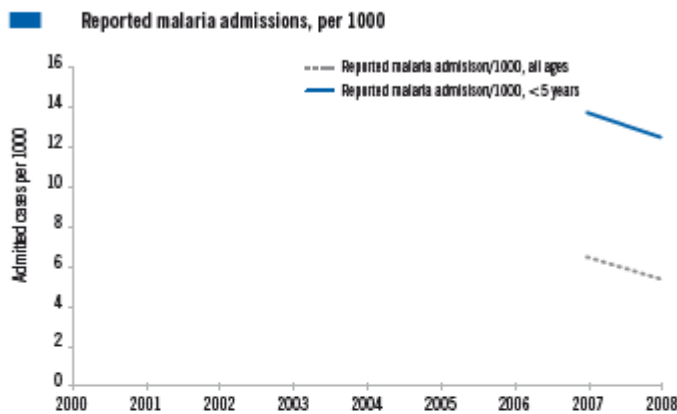
Trends in malaria morbidity and mortality



Rate of examination, case confirmation, malaria test positivity, % of confirmed cases that are *P. falciparum*



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									
2001									
2002									
2003									
2004									
2005									
2006									
2007	6 155 082	1 419 774	21 720 674						
2008	4 831 491	2 304 974	21 266 935						



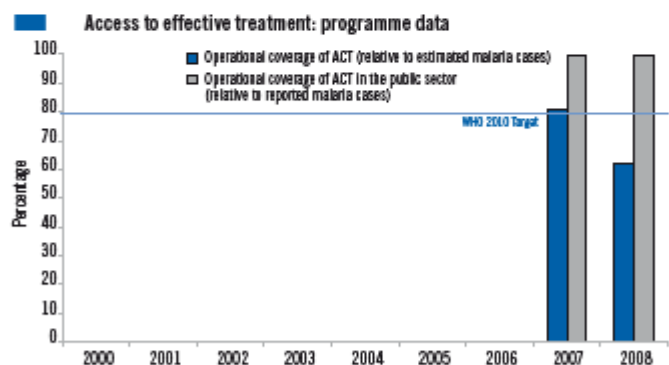
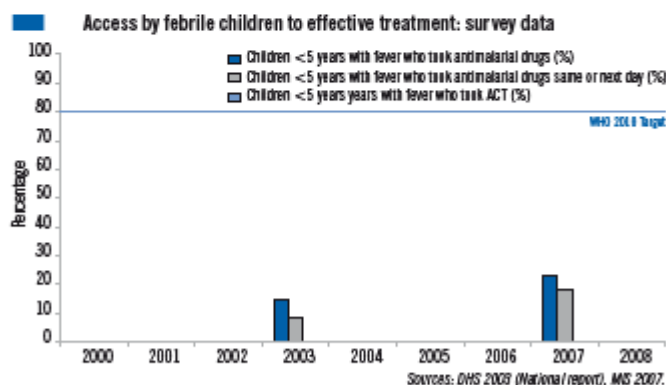
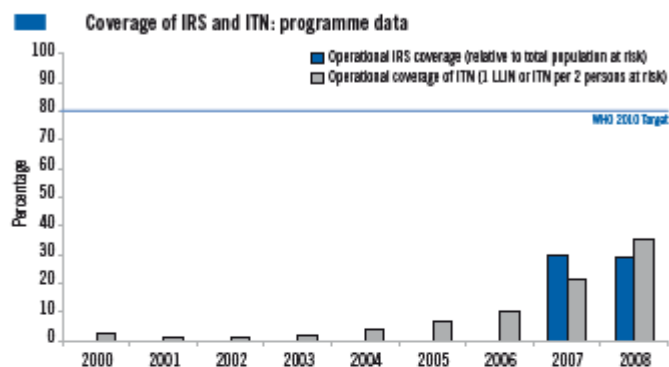
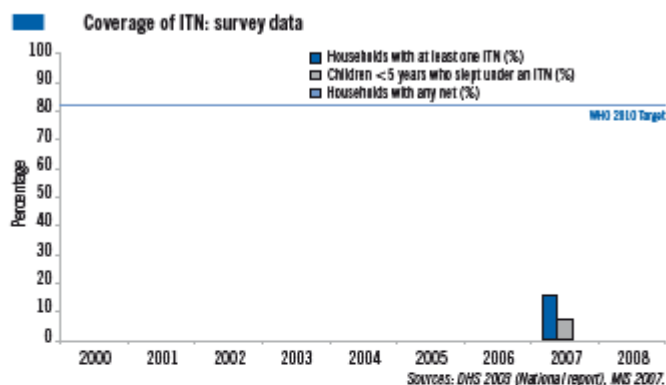
Year	Reported malaria admissions, all ages	Reported malaria admissions, < 5 years	All-cause admissions, all ages	All-cause admissions, < 5 years	Reported malaria deaths, all ages	Reported malaria deaths, < 5 years	All-cause deaths, all ages	All-cause deaths, < 5 years	Reporting completeness of inpatient health facilities (%)	Reporting completeness of districts (%)
2000										
2001										
2002										
2003										
2004										
2005										
2006										
2007	141 663	52 132	410 039	106 432	5 816	1 733	31 975	7 243		
2008	120 259	47 749	329 211	100 310	4 424	1 305	25 787	6 524		

II. INTERVENTION POLICIES AND STRATEGIES

Intervention	WHO-RECOMMENDED 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	2003	Distribution – Antenatal care	Yes	2003
	Targeting all age groups	Yes	2009	Distribution – EPI routine and campaign	No	–
				Targeting children < 5 years and pregnant women	Yes	2003
			ITN distribution is subsidized	No	–	
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	Yes	–	Insecticide-resistance management implemented	Yes	2007
	DDT is used for IRS (public health) only	Yes	2005	Where IRS is conducted, other options are also implemented, e.g. ITN	Yes	2003
				IRS is used for prevention and control of epidemics	Yes	–
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	Yes	2006			
Case management	Oral artemisinin monotherapies banned (prohibited from registration or removed from the system)	Yes	2004	Parasitological confirmation for patients ≥ 5 years only	–	–
	Parasitological confirmation for patients of all ages	Yes	2009	Malaria diagnosis is free of charge in the public sector	Yes	–
	ACT is free of charge for < 5 years old in the public sector	Yes	2005	ACT is free of charge for patients ≥ 5 years in the public sector	Yes	–
	Diagnosis of malaria of inpatients is based on parasitological confirmation	Yes	–	ACT is delivered at community level through community agents (beyond the health facilities)	Yes	2005
	Pre-referral treatment with quinine or artemether IM or artesunate suppositories	Yes	–	Uncomplicated malaria cases are admitted	No	–
	Oversight regulation of case management in the private sectors	–	–			
	RDTs used at community level	Yes	2007			

Antimalarial policy	Type of medicine	Year adopted	Results of therapeutic efficacy tests						
			Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AL	2004	2006–2008	3	0	0	2	0	2
First-line treatment of <i>P. falciparum</i> (confirmed)	AL	2004							
Treatment failure of <i>P. falciparum</i>	AS + AQ	2004							
Treatment of severe malaria	QN(7d)	2004							
Treatment of <i>P. vivax</i>	–	–							

III. IMPLEMENTING MALARIA CONTROL



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							219 344		
2001							104 277		
2002							130 326		
2003							201 492		
2004							401 802		
2005							706 364		
2006							683 370		
2007					1 682 369	6 465 517	1 586 534	6 155 082	6 155 082
2008					1 945 389	6 545 395	2 086 367	4 831 491	4 831 491

IV. FINANCING MALARIA CONTROL

Governmental and external financing

No data

Breakdown of expenditure by intervention in 2008

No data

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 (National report), MIS 2007
Treatment	DHS 2003 (National report), MIS 2007
Use of health services	DHS 2003

MYANMAR

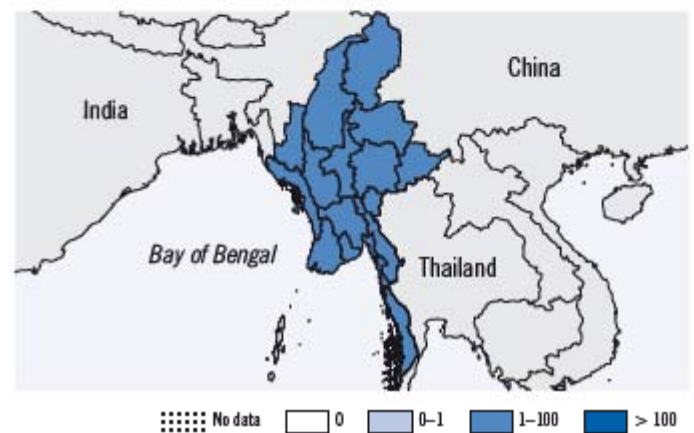
Although much of the population is at risk for malaria, the most vulnerable segment consists of non-immune migrant workers involved in gem-mining in forests, logging, agriculture and construction. The number of reported cases increased from 245 000 in 2000 to 566 000 in 2008, but most reported cases are not examined by microscopy or RDT. The number of cases confirmed by microscopy increased from 120 029 in 2000 to 411 494 in 2008. The increase was associated with a 20% increase in the number of slides examined and an increase in the slide positivity rate, from 31% to 45%. The introduction of RDTs added a further 187 289 confirmed cases in 2008. The percentage of cases due to *P. falciparum* was approximately 75% in 2008. The number of malaria admissions decreased from 85 409 in 2000 to 47 553 in 2008, and the number of deaths decreased from 2756 to 1088. Malaria represented 6% of all admissions in 2008 as compared with 16% in 2000 and 11% of recorded deaths in 2008 as compared with 19% in 2000. About 694 000 ITNs were delivered in 2008, of which 113 000 were LLINs. An additional 11 000 people were protected by IRS.

I. EPIDEMIOLOGICAL PROFILE

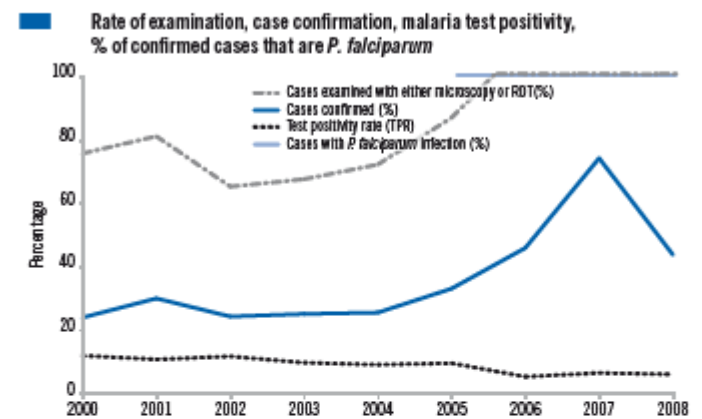
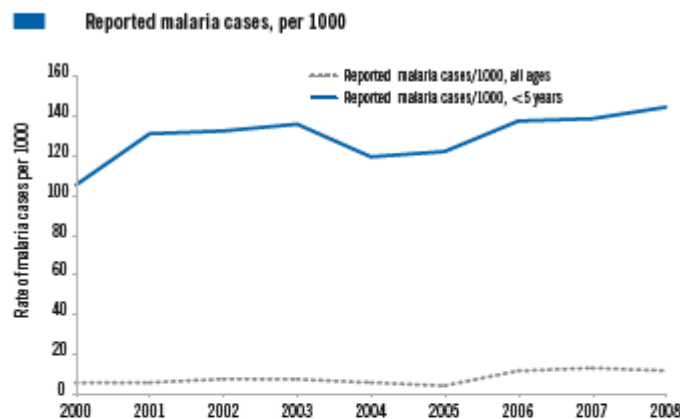
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	49 563	
< 5 years	4 629	9
≥ 5 years	44 934	91
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	25 011	50
Low transmission (0–1/1000)	9 038	18
Malaria-free (0 cases)	15 514	31
Rural population	33 418	67
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>dirus, minimus, sundaicus</i>	
<i>Plasmodium</i> species	<i>falciparum, vivax</i>	

Stratification of burden (reported cases, per 1000)

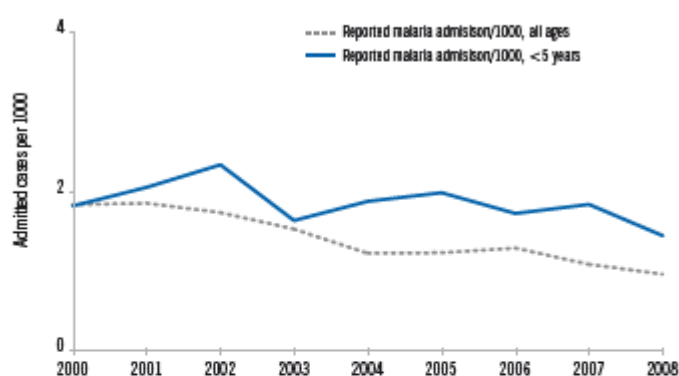


Trends in malaria morbidity and mortality

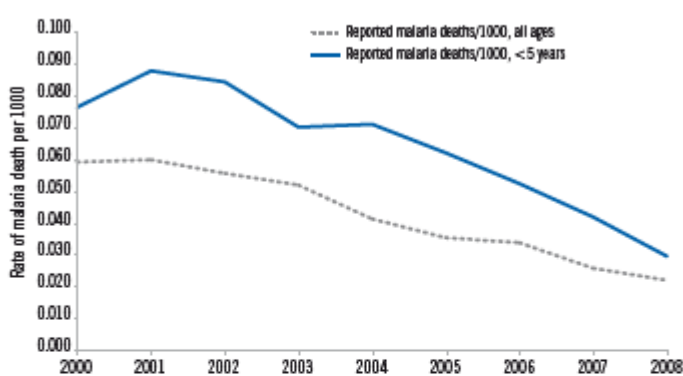


Year	Reported malaria cases, all ages	Reported malaria cases, < 5 years	All-cause outpatient consultations, all ages	All-cause outpatient consultations, < 5 years	Examined	Positive	<i>P. falciparum</i>	Reporting completeness of outpatient health facilities (%)	Reporting completeness of districts (%)
2000	245 355	477 108	4 828 170		381 619	120 029			
2001	254 660	593 223	5 182 738		463 194	170 502			
2002	344 791	601 038	5 243 515		467 851	173 096			
2003	340 311	619 389	5 250 160		481 201	177 530			
2004	263 731	547 104	5 195 966		432 581	152 070			
2005	184 986	562 031	5 406 736		437 387	165 737			
2006	551 537	634 650	5 222 385		522 187	216 470			
2007	630 385	641 117	6 345 263		838 660	332 056			
2008	566 204	668 697	6 288 374		948 937	411 494			

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	85 409	8 259	529 464	46 908	2 756	347	14 212	2 007		
2001	87 111	9 301	591 546	61 296	2 814	398	15 382	1 791		
2002	82 193	10 610	612 823	70 639	2 634	383	14 583	2 546		
2003	72 824	7 470	602 178	63 738	2 476	320	14 269	1 969		
2004	58 641	8 615	600 939	76 002	1 982	326	13 183	1 995		
2005	59 405	9 147	650 417	81 201	1 707	286	13 560	1 734		
2006	62 813	7 974	643 594	80 138	1 647	242	12 473	1 674		
2007	53 220	8 516	723 380	83 279	1 265	194	12 682	1 669		
2008	47 553	6 701	740 930	96 135	1 088	137	9 676	1 356		

II. INTERVENTION POLICIES AND STRATEGIES

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

Antimalarial policy	Type of medicine	Year adopted	Results of therapeutic efficacy tests						
			Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	CQ	2002	2000–2006	9	1.8	0	8.9	0	6.55
First-line treatment of <i>P. falciparum</i> (confirmed)	DHA-PPQ, AL, AS+MQ	2008	2003–2008	5	0	0	5	0	2.85
Treatment failure of <i>P. falciparum</i>	DHA-PPQ, AS+AM, AL	2008							
Treatment of severe malaria	AM inj, QN and ACT*, AS inj	2008							
Treatment of <i>P. vivax</i>	CQ+PQ(14d)	2008							

* If patient can tolerate oral treatment

III. IMPLEMENTING MALARIA CONTROL

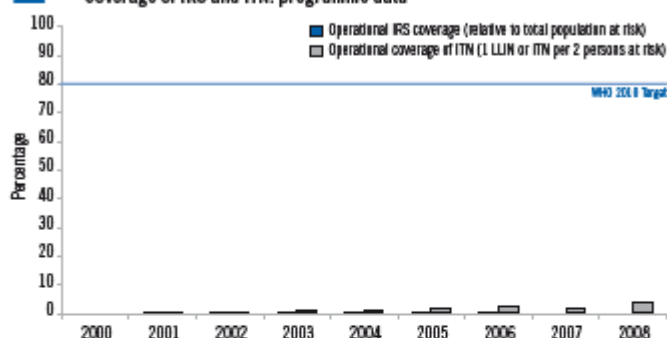
Coverage of ITN: survey data

No data

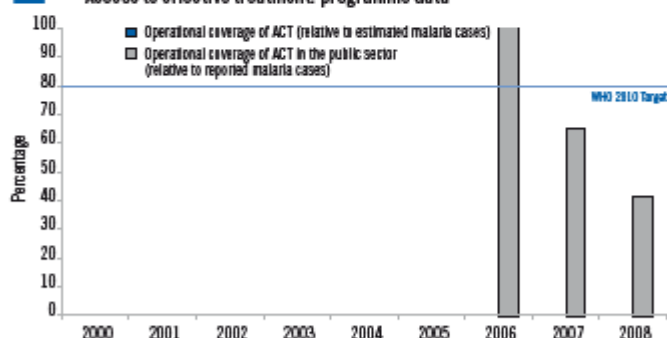
Access by febrile children to effective treatment: survey data

No data

Coverage of IRS and ITN: programme 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					20 437	95 795	46 903		
2002					12 445	63 015	47 329		
2003					7 932	44 075	137 695		
2004					4 165	19 764	181 072		
2005					4 934	32 840	222 886		
2006					6 116	33 391	538 436		326 188
2007					3 098	10 479	298 579		226 397
2008					2 902	11 284	693 858		187 102

IV. FINANCING MALARIA CONTROL

Governmental and external financing

No data

Breakdown of expenditure by intervention in 2008

No data

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)	No surveys
Treatment	No surveys
Use of health services	MICS 2000

NIGER

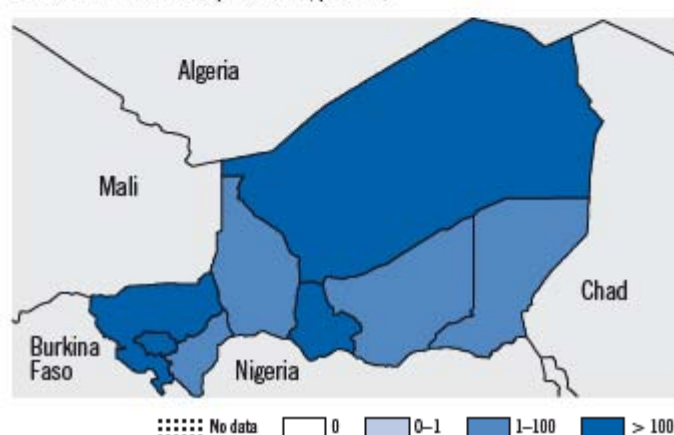
Malaria transmission is more intensive in the south, occurring seasonally between January and April. The desert areas in the north are malaria-free. Almost all cases are caused by *P. falciparum*, but only a fraction of the suspected cases are parasitologically tested. The numbers of reported cases and deaths fluctuated over the period 2001–2008, mostly showing increasing trends, probably due to better reporting. During 2006–2008, the national malaria control programme delivered nearly 4 million LLINs, of which 1.7 million were delivered during a mass campaign in 2007. The 2006 demographic and health survey reported that 69% of households owned a mosquito net and 43% an ITN, but only 7% of children under 5 years slept under an ITN. After the adoption of ACTs as first-line treatment in 2005, the programme delivered 1.4 million ACT treatment courses in 2007 and 1.6 million in 2008, adequate to treat about 80% of the reported suspected malaria cases in the public sector. In the survey, only one third of children with fever were given antimalarial medicine. The programme provided little information about funding in recent years but reported a major award from the Global Fund in 2004.

I. EPIDEMIOLOGICAL PROFILE

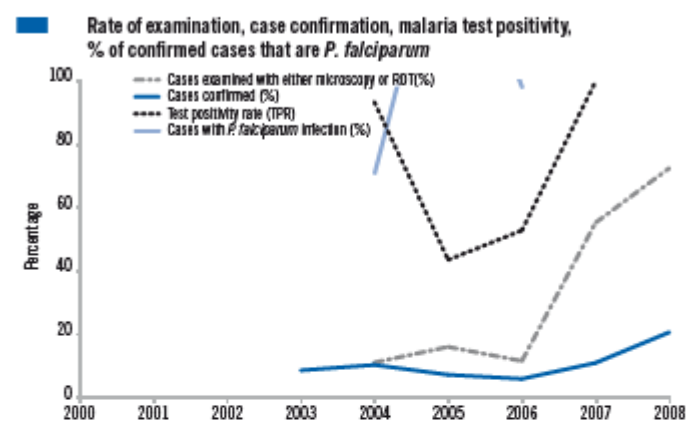
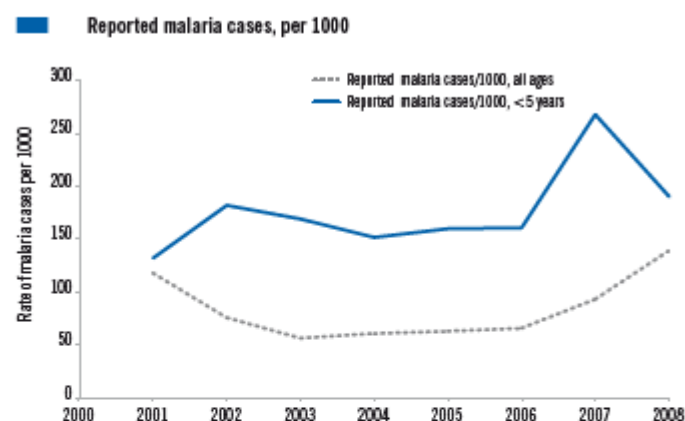
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	14 704	
< 5 years	3 121	21
≥ 5 years	11 584	79
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	10 146	69
Low transmission (0–1/1000)	4 558	31
Malaria-free (0 cases)	0	0
Rural population	12 283	84
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>gambiae</i> , <i>arabiensis</i> , <i>funestus</i> , <i>coustani</i> , <i>moucheti</i> , <i>moucheti</i> , <i>nili</i> , <i>pharoensis</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

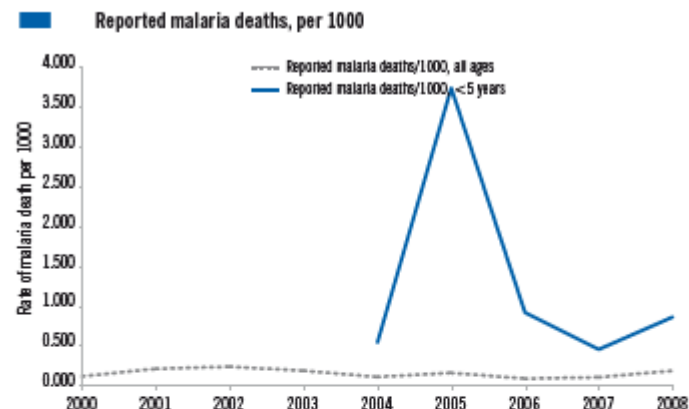
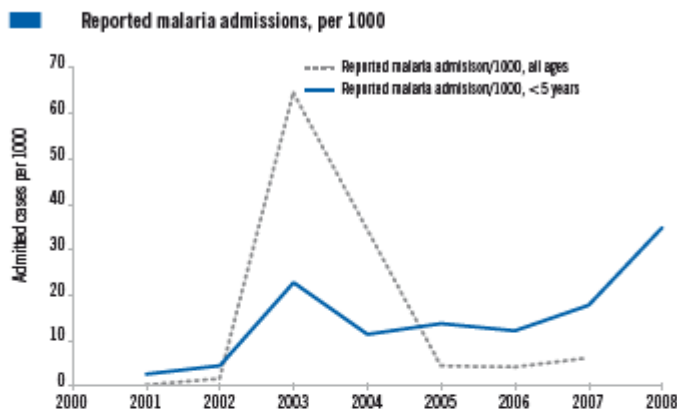
Stratification of burden (reported cases, per 1000)



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									100
2001	1 340 142	304 032	4 989 176	2 137 498					100
2002	888 345	431 710	4 827 380	2 080 927					100
2003	681 783	414 284	3 996 584	1 847 222		56 460			100
2004	760 718	385 674	1 663 367	731 299	81 814	76 030	53 637		100
2005	817 707	424 691	2 595 771	833 437	128 322	56 043	74 129		100
2006	886 531	449 044	3 458 631	1 627 033	99 670	49 624	44 612		100
2007	1 308 234	790 448	5 119 076	1 957 624	718 215	138 902			100
2008	2 033 971	593 153			1 466 095	413 252			100



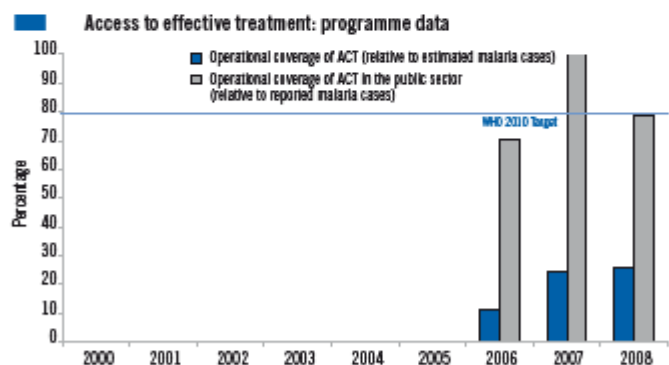
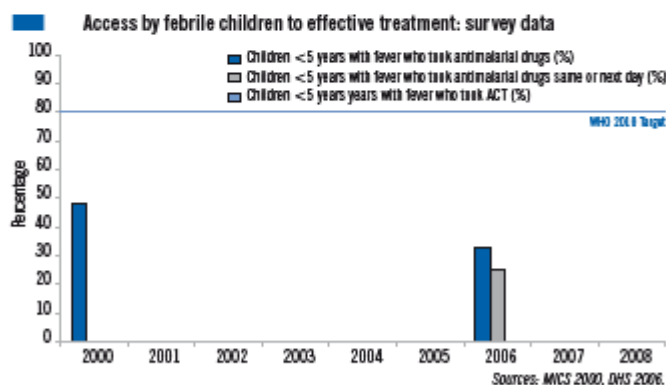
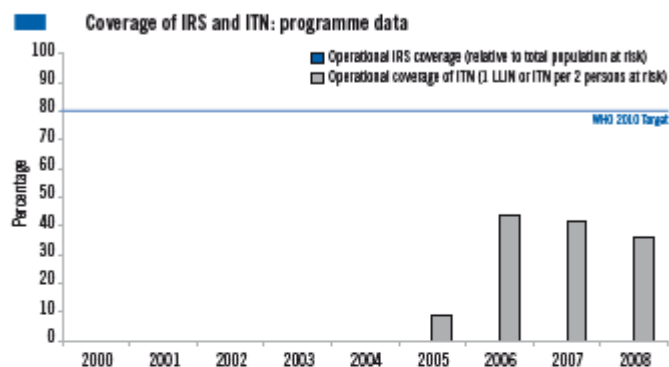
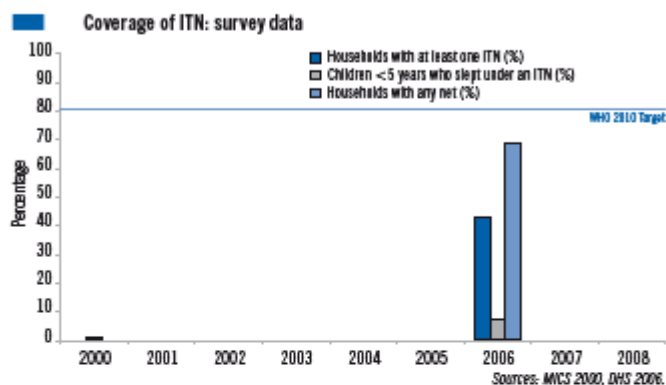
Year	Reported malaria admissions, all ages	Reported malaria admissions, < 5 years	All-cause admissions, all ages	All-cause admissions, < 5 years	Reported malaria deaths, all ages	Reported malaria deaths, < 5 years	All-cause deaths, all ages	All-cause deaths, < 5 years	Reporting completeness of inpatient health facilities (%)	Reporting completeness of districts (%)
2000					1 244					
2001	1 665	5 888	15 979		2 366					
2002	17 777	10 500	44 649		2 769					
2003	786 159	55 754			2 248					
2004		28 876			1 333	1 382				
2005	56 613	36 424	127 894		2 060	9 958				
2006	55 127	33 853			1 150	2 570				
2007	85 404	52 390			1 420	1 349				
2008		108 692			2 691	2 691				

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	2005	Distribution – Antenatal care	Yes	2004
	Targeting all age groups	No	–	Distribution – EPI routine and campaign	Yes	2005
				Targeting children < 5 years and pregnant women	Yes	1998
				ITN distribution is subsidized	Yes	2003
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	No	–	Insecticide-resistance management implemented	Yes	1998
	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	2000
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	Yes	2005			
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	No	–
	ACT is free of charge for < 5 years old in the public sector	Yes	2005	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	2005
	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	2000			
	RDTs used at community level	Yes	2006			

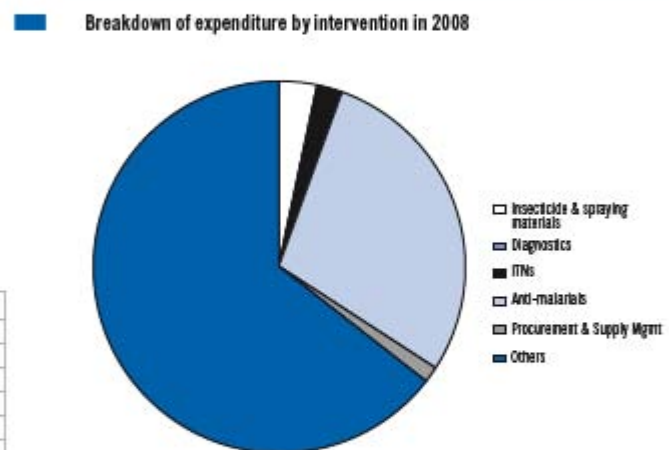
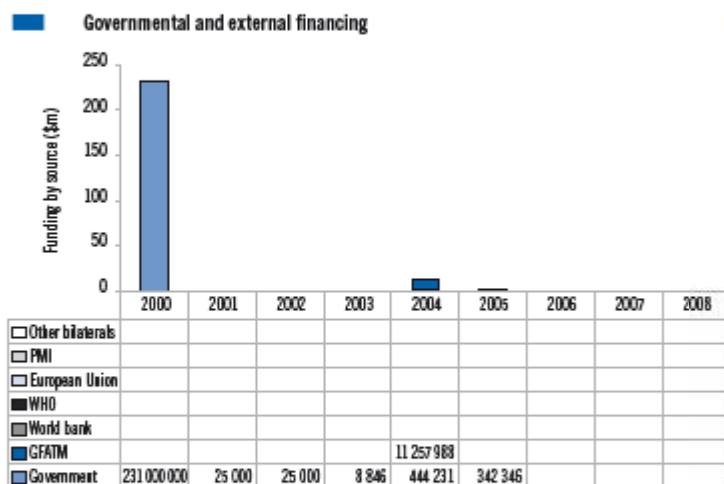
Antimalarial policy	Type of medicine	Year adopted	Study year	Results of therapeutic efficacy tests					
				No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AL	2005	2006	1	4.4	4.4	4.4	4.4	4.4
First-line treatment of <i>P. falciparum</i> (confirmed)	AL	2005							
Treatment failure of <i>P. falciparum</i>	QN(7d)	2005							
Treatment of severe malaria	QN(7d)	2005							
Treatment of <i>P. vivax</i>	–	–							

III. IMPLEMENTING MALARIA CONTROL



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								592 334	
2001								938 268	
2002								1 323 335	
2003								888 345	
2004								681 783	
2005							300 000	764 443	
2006	13	7	-	-			2 665 000	622 127	622 127
2007							710 000	1 162 636	1 431 358
2008							700 000	2 033 971	1 593 782

IV. FINANCING MALARIA CONTROL



V. SOURCE OF INFORMATION

PROGRAMME DATA	SURVEY AND OTHER DATA
Reported cases	Surveillance data
Operational coverage of ITNs, IRS and access to medicines	Insecticide-treated nets (ITN)
Financial data	Treatment
	Use of health services
	No surveys
	No surveys
	MICS 2000

NIGERIA

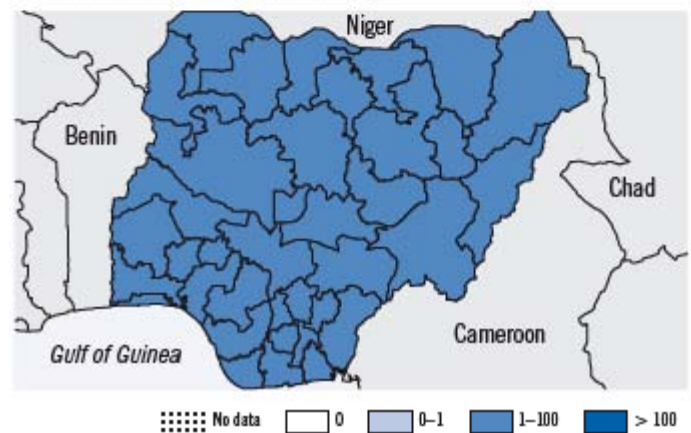
Nigeria accounted for one fourth of all estimated malaria cases in the WHO African Region in 2006. Transmission occurs all year round in the south but is more seasonal in the north. Almost all cases are caused by *P. falciparum*, but only a small fraction are parasitologically tested. The surveillance data show neither the true magnitude of the malaria burden nor evidence of a systematic decrease, because of inconsistent and incomplete reporting. IRS was piloted in some project areas in 2008. The national malaria control programme delivered about 11.5 LLINs and 7.3 million ITNs during 2006–2008 (7.7 million LLINs were delivered in 2007 and 2008), covering only 5% of the population at risk. The programme delivered about 8 million ACT treatment courses in 2006 and 12 million in 2008, far fewer (10%) than the estimated treatment needs. Funding for malaria control was reported to have increased from US\$ 17 million in 2005 to over US\$ 82 million in 2008, provided mainly by the Government, the Global Fund and the World Bank. This amount is unlikely to be sufficient to reach the national targets for prevention and cure.

I. EPIDEMIOLOGICAL PROFILE

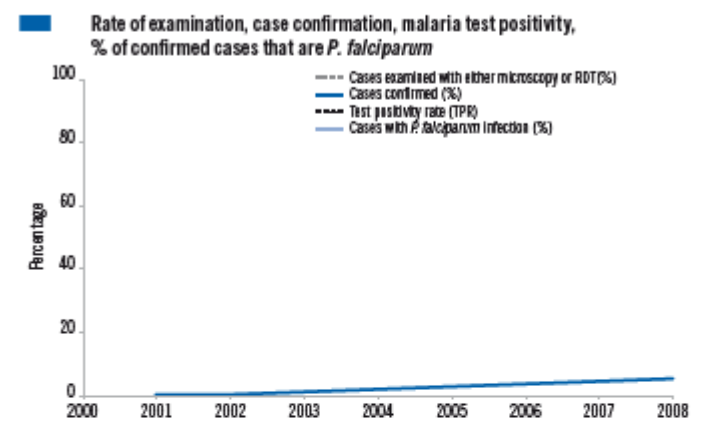
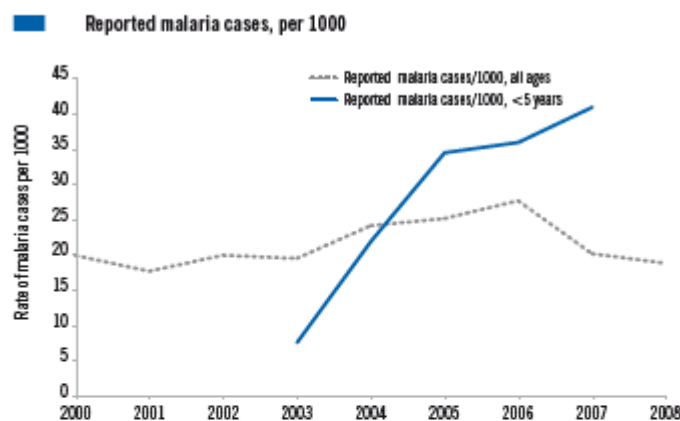
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	151 212	
< 5 years	25 020	17
≥ 5 years	126 193	83
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	151 212	100
Low transmission (0–1/1000)	0	0
Malaria-free (0 cases)	0	0
Rural population	78 089	52
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>gambiae</i> , <i>arabiensis</i> , <i>funestus</i> , <i>brochieri</i> , <i>coustani</i> , <i>flavicosta</i> , <i>hancocki</i> , <i>hargreavesi</i> , <i>melas</i> , <i>moucheti</i> , <i>moucheti</i> , <i>nilii</i> , <i>paludis</i> , <i>pharoensis</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

Stratification of burden (reported cases, per 1000)

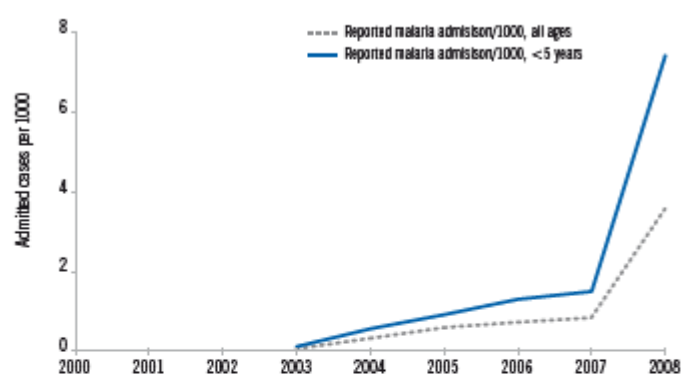


Trends in malaria morbidity and mortality

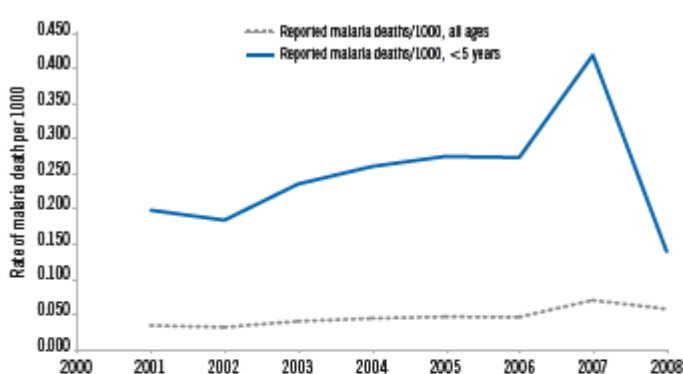


Year	Reported malaria cases, all ages	Reported malaria cases, < 5 years	All-cause outpatient consultations, all ages	All-cause outpatient consultations, < 5 years	Examined	Positive	<i>P. falciparum</i>	Reporting completeness of outpatient health facilities (%)	Reporting completeness of districts (%)
2000	2 476 608								
2001	2 253 519		3 882 376			150			
2002	2 605 381		4 488 796			380			
2003	2 608 479	171 812	4 237 566						
2004	3 310 229	507 173	4 970 109						
2005	3 532 108	814 274	5 302 576						
2006	3 982 372	865 374	5 633 088						
2007	2 969 950	1 004 392							
2008	2 834 174		6 305 973			143 079		92	

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										
2001					4 317	4 317				
2002					4 092	4 092				
2003	5 935	2 358	96 074	32 101	5 343	5 343				
2004	41 913	12 814	342 748	102 152	6 032	6 032	7 632			
2005	80 825	21 455	614 272	186 861	6 494	6 494	13 504			
2006	102 303	31 151	675 044	212 596	6 586	6 586	8 747			
2007	121 696	36 647	747 193	211 559	10 289	10 289	12 013			
2008	538 487	185 784	1 117 763	368 707	8 677	3 487	20 813	8 846		

II. INTERVENTION POLICIES AND STRATEGIES

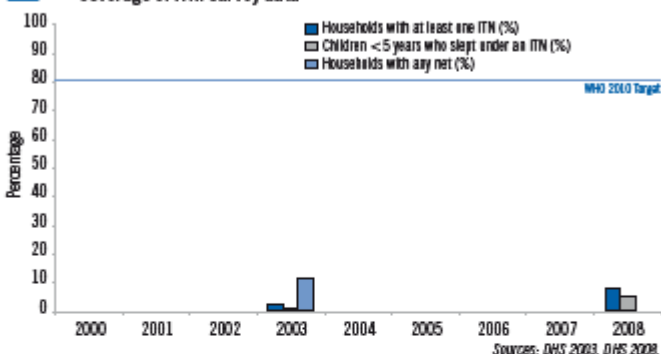
Intervention	WHO-RECOMMENDED POLICIES / STRATEGIES	Yes or No	Year adopted	OPTIONAL POLICIES / STRATEGIES		
				Yes or No	Year adopted	
Insecticide-treated nets (ITN)	Distribution of ITN/LLINs – Free	Yes	2001	Distribution – Antenatal care	Yes	2001
	Targeting all age groups	Yes	2009	Distribution – EPI routine and campaign	Yes	2006
				Targeting children < 5 years and pregnant women	Yes	2001
				ITN distribution is subsidized	Yes	2004
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	2007
				IRS is used for prevention and control of epidemics	No	–
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	Yes	2004			
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	Yes	2006	Malaria diagnosis is free of charge in the public sector	No	–
	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	2009
	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)	Yes	–
	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	Yes	1997			
	RDTs used at community level	No	–			

Results of therapeutic efficacy tests

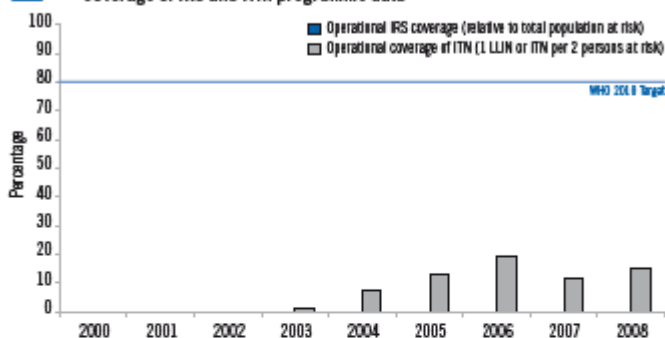
Antimalarial policy	Type of medicine	Year adopted	Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AS+AQ, AL	2004							
First-line treatment of <i>P. falciparum</i> (confirmed)	AS+AQ, AL	2004							
Treatment failure of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

III. IMPLEMENTING MALARIA CONTROL

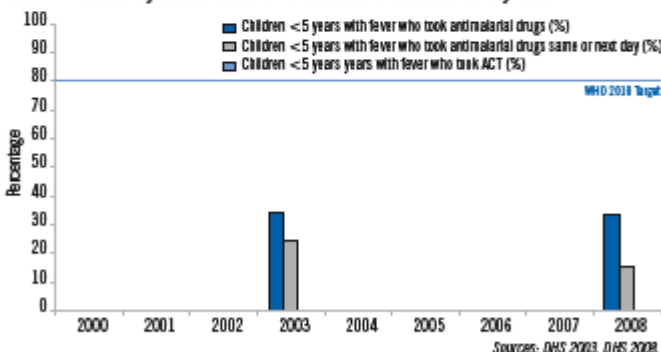
Coverage of ITN: survey data



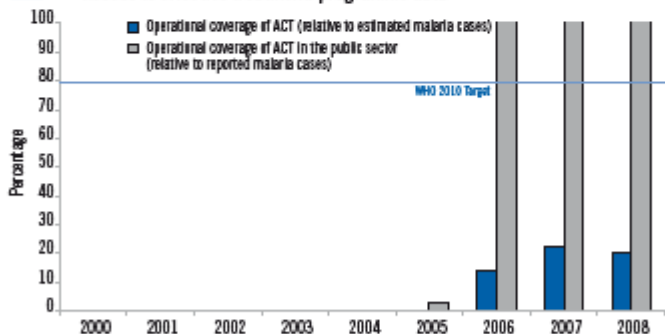
Coverage of IRS and ITN: programme data



Access by febrile children to effective treatment: survey data



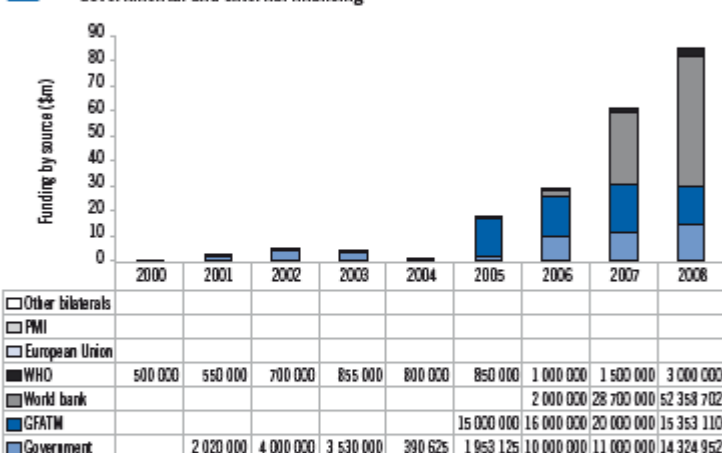
Access to effective treatment: programme data



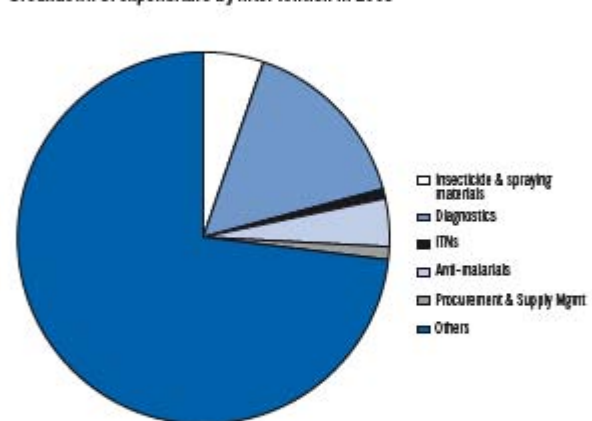
Year	Pregnant women who slept under any net (%)	Pregnant women who slept under an ITN (%)	Children < 5 years with fever (%)	Febrile children < 5 years who sought treatment in HF (%)	Number of households protected by IRS	Number of people protected by IRS	Number of ITNs and/or LLINs	Number of 1st-line treatment courses received	Number of ACT treatment courses received
2000									
2001							200 000	2 253 519	
2002							218 900	2 605 381	
2003	5	1	-	-			917 964	2 608 479	
2004							4 324 230	3 310 229	726
2005							5 086 934	3 532 108	100 000
2006					900	4 500	8 853 589	8 512 480	8 000 000
2007					600	3 000	3 225 594	13 019 950	13 000 000
2008							6 700 000	12 000 000	12 000 000

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, DHS 2008
Treatment	DHS 2003, DHS 2008
Use of health services	DHS 2003

PAKISTAN

A total of 4.5 million suspected malaria cases were reported in 2008, comprising 6% of all outpatient attendances and 18% of admissions; only 59 284 confirmed cases were reported in 2008, 40% of which originated in Balochistan province. About 30% of the confirmed cases are due to *P. falciparum*. IRS has been used selectively, covering about 600 000 households and protecting 4.9 million people at risk in 2008. Between 2006 and 2008, the programme delivered 300 000 LLINs, far fewer than the number needed to protect the population at risk. Information about the provision of ACT in 2008 was not provided by the programme, although delivery of 6.8 million doses of antimalarial medicine was reported. With a decrease in the number of malaria cases in Punjab, the malaria programme is considering a pre-elimination project in that province. Government funding for malaria control has been approximately US\$ 1 million annually since 2002, while Global Fund disbursements between 2003 and 2008 totalled US\$ 12 million.

I. EPIDEMIOLOGICAL PROFILE

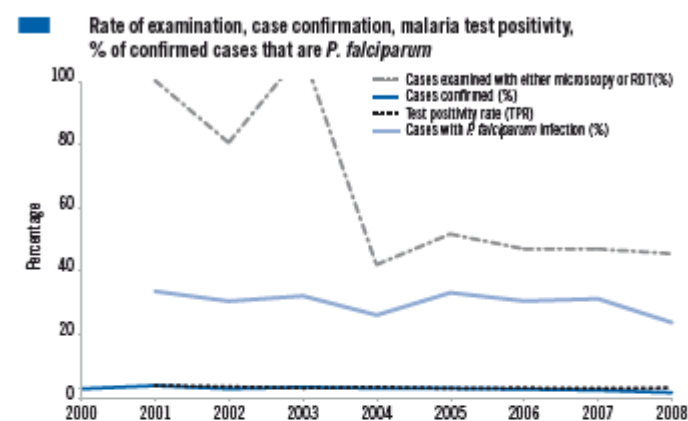
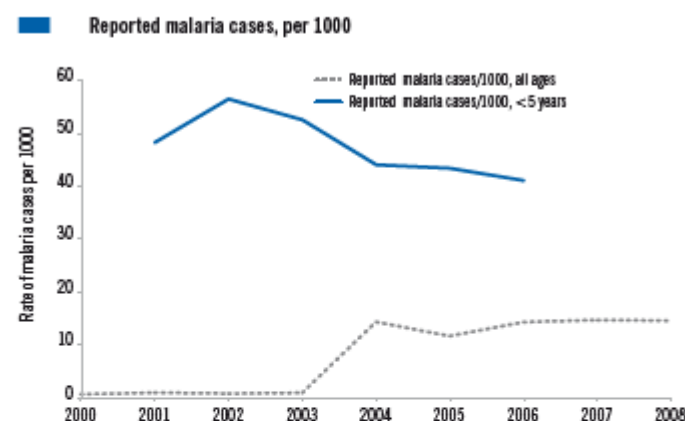
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	176 952	
< 5 years	23 778	13
≥ 5 years	153 174	87
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	26 173	15
Low transmission (0–1/1000)	143 129	81
Malaria-free (0 cases)	7 649	4
Rural population	113 048	64
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>culicifacies</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

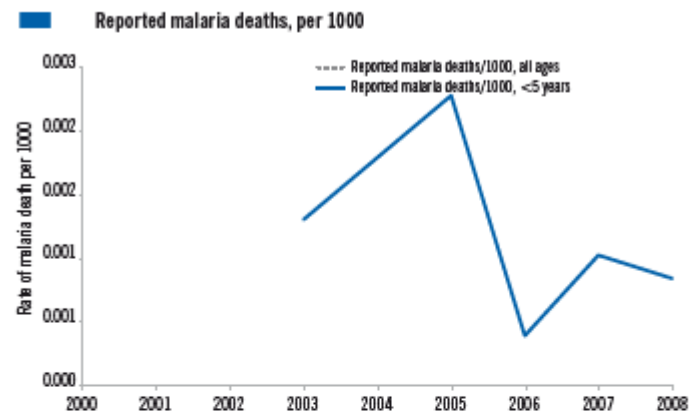
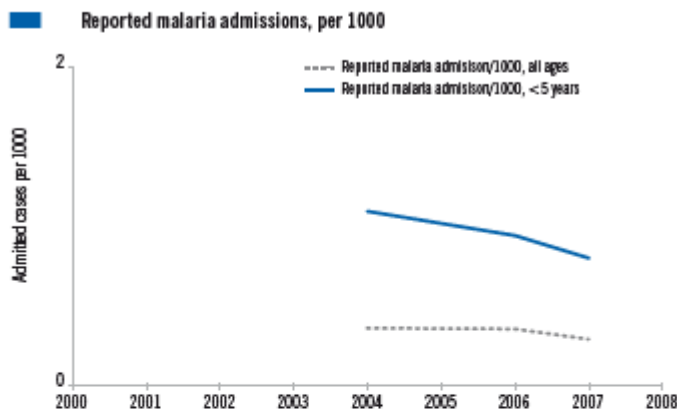
Stratification of burden (reported cases, per 1000)



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	82 526		55 762 741			82 526			
2001	125 292	1 048 071	62 367 045		3 572 425	125 292	41 771		
2002	107 666	1 240 606	70 175 717		3 399 524	107 666	32 591		
2003	125 152	1 167 377	70 444 716		4 577 037	125 152	39 944		
2004	2 304 920	990 248	67 360 844		1 574 181	101 640	32 761		
2005	1 914 607	988 624	73 067 297		1 918 977	97 049	42 056		
2006	2 404 055	948 337	74 045 571		2 011 538	100 956	37 837		
2007	2 523 696		75 466 786		2 123 007	92 971	39 856		
2008	2 558 998		76 890 457		2 054 533	59 284	24 550		



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										
2001										
2002										
2003						29				
2004	58 389	24 714	322 970	151 855						
2005						52				
2006	60 162	21 847	198 574	90 834		9				
2007	50 409	18 812	197 490	100 896		24				
2008						20				

II. INTERVENTION POLICIES AND STRATEGIES

Intervention	WHO-RECOMMENDED 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	2008	Distribution – Antenatal care	Yes	2008
	Targeting all age groups	No	–	Distribution – EPI routine and campaign	No	–
				Targeting children < 5 years and pregnant women	Yes	2008
				ITN distribution is subsidized	No	–
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	Yes	1998	Insecticide-resistance management implemented	Yes	2005
	DDT is used for IRS (public health) only	No	–	Where IRS is conducted, other options are also implemented, e.g. ITN	No	–
				IRS is used for prevention and control of epidemics	Yes	1998
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	No	–			
Case management	Oral artemisinin monotherapies banned (prohibited from registration or removed from the system)	Yes	2007	Parasitological confirmation for patients ≥ 5 years only	No	–
	Parasitological confirmation for patients of all ages	Yes	2009	Malaria diagnosis is free of charge in the public sector	Yes	2000
	ACT is free of charge for < 5 years old in the public sector	Yes	2007	ACT is free of charge for patients ≥ 5 years in the public sector	Yes	2009
	Diagnosis of malaria of inpatients is based on parasitological confirmation	Yes	2000	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	1998	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)	AS + SP	–							
First-line treatment of <i>P. falciparum</i> (confirmed)	AS + SP	–							
Treatment failure of <i>P. falciparum</i>	QN	–							
Treatment of severe malaria	AM, QN	–							
Treatment of <i>P. vivax</i>	CQ + PQ(Sd)	–							

III. IMPLEMENTING MALARIA CONTROL

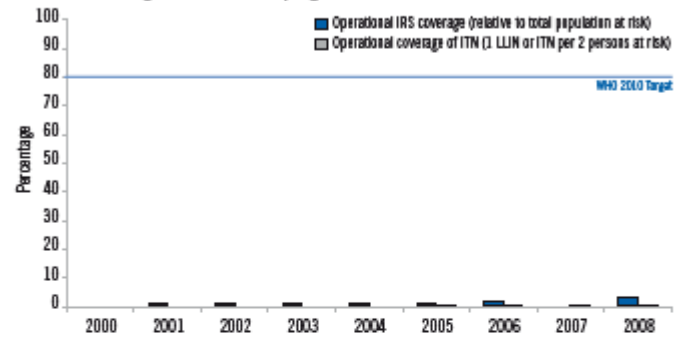
Coverage of ITN: survey data



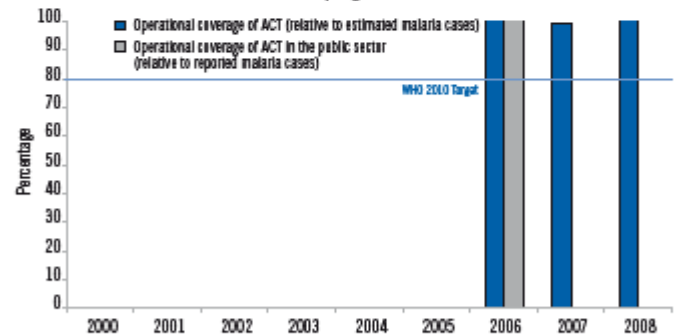
Access by febrile children to effective treatment: survey data



Coverage of IRS and ITN: programme data



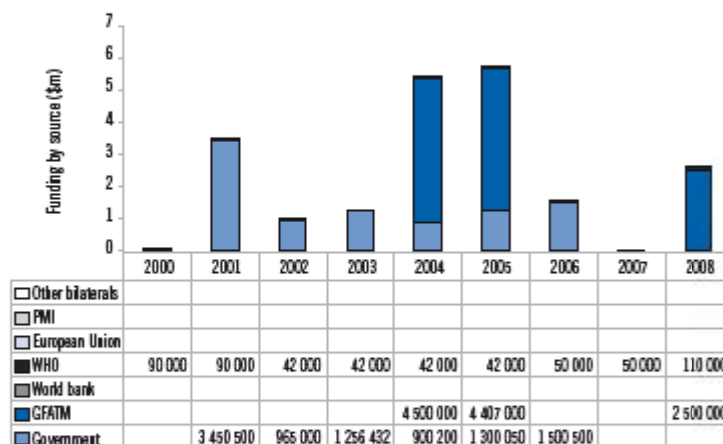
Access to effective treatment: programme data



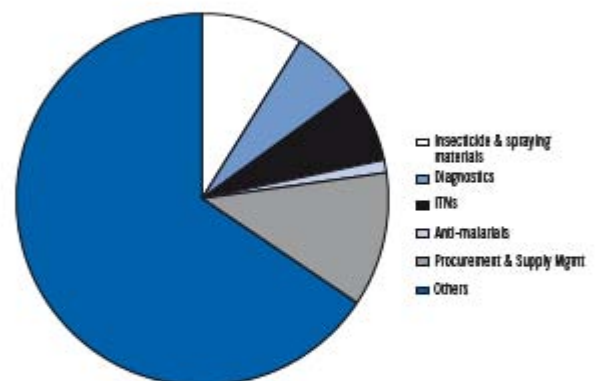
Year	Pregnant women who slept under any net (%)	Pregnant women who slept under an ITN (%)	Children < 5 years with fever (%)	Febrile children < 5 years who sought treatment in HF (%)	Number of households protected by IRS	Number of people protected by IRS	Number of ITNs and/or LLINs	Number of 1st-line treatment courses received	Number of ACT treatment courses received
2000									
2001					277 704	1 369 032			
2002					234 691	1 339 800	20 000		
2003					229 680	1 696 380			
2004					289 829	1 690 668	2 000		
2005					325 886	1 901 004	140 000		
2006					319 920	2 291 520	240 000	8 097 000	39 856
2007							90 000	4 513 876	
2008					602 314	4 938 975	41 400	6 762 058	

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)	No surveys
Treatment	No surveys
Use of health services	DHS 1990

PAPUA NEW GUINEA

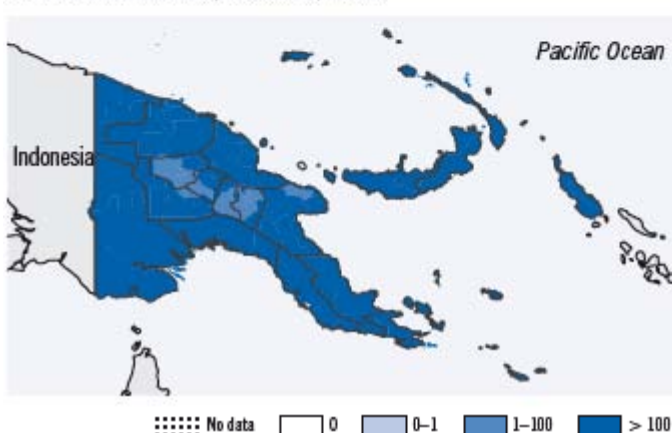
Malaria is highly endemic and comparatively stable in coastal areas; it is less stable in the highlands, which are prone to epidemics with many fatalities. Between 70% and 80% of infections are due to *P. falciparum*. Malaria is among the leading causes of hospital admissions and among the most important causes of death in children. There was no evidence of a systematic decrease in the numbers of cases of suspected malaria, severe cases and deaths during the period 2001–2008. About 15% of suspected cases attending health centres and hospitals are confirmed parasitologically. IRS is implemented in limited areas in the highlands, protecting just 25 000 people at risk in 2007. The programme delivered about 1 million LLINs between 2006 and 2008. The 2006 demographic and health survey estimated that 33% of households owned at least one ITN, while 17% of children under 5 and 17% of pregnant women had slept under an ITN the previous night. The use of ACTs for treatment of *P. falciparum* malaria has been adopted as policy but is not yet implemented. Before 2003, investment in malaria control was limited, but the funds disbursed by the Global Fund exceeded US\$ 15 million between 2003 and 2008, and Papua New Guinea was successful in obtaining US\$ 147 million from the Global Fund in round 8 to cover the period 2009–2014, the highest award outside Africa, corresponding to more than US\$ 25 per person at risk for malaria.

I. EPIDEMIOLOGICAL PROFILE

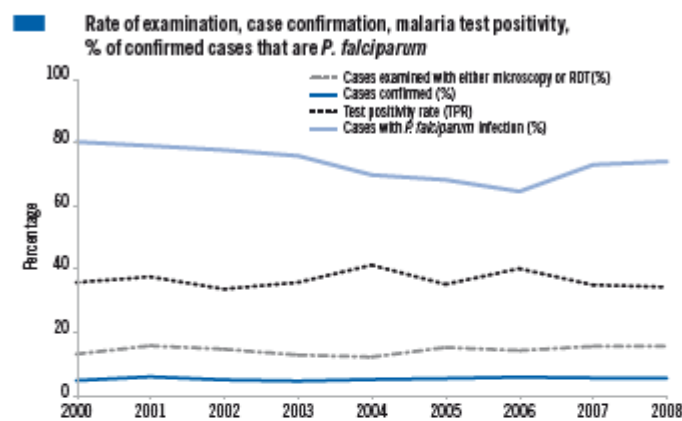
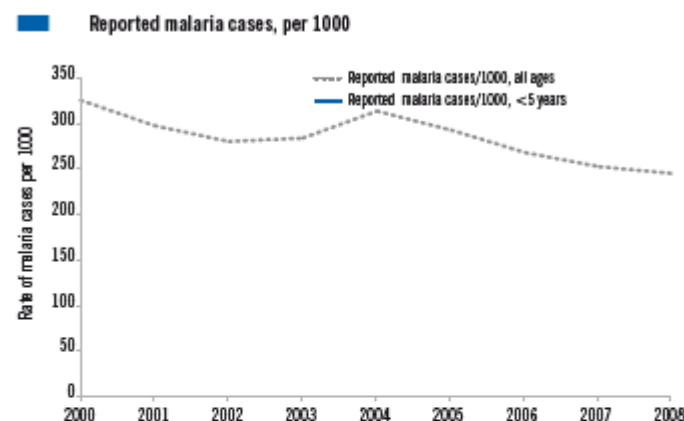
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	6 577	
< 5 years	950	14
≥ 5 years	5 626	86
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	6 182	94
Low transmission (0–1/1000)	395	6
Malaria-free (0 cases)	0	0
Rural population	5 756	88
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>farauti</i> , <i>farauti4</i> , <i>koliensis</i> , <i>punctulatus</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

Stratification of burden (reported cases, per 1000)

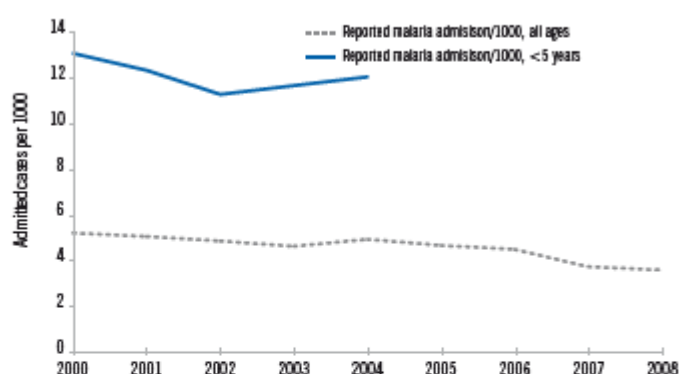


Trends in malaria morbidity and mortality

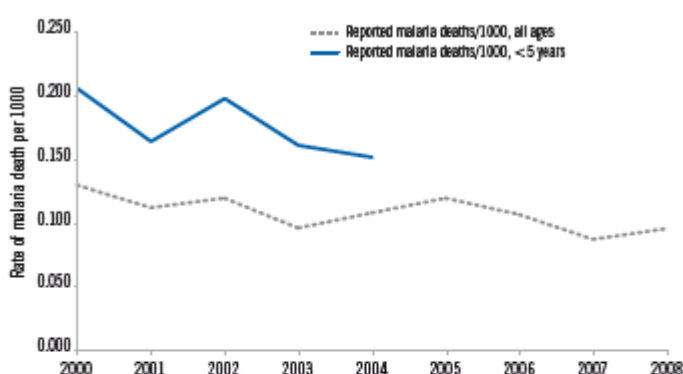


Year	Reported malaria cases, all ages	Reported malaria cases, < 5 years	All-cause outpatient consultations, all ages	All-cause outpatient consultations, < 5 years	Examined	Positive	<i>P. falciparum</i>	Reporting completeness of outpatient health facilities (%)	Reporting completeness of districts (%)
2000	1 751 883		5 466 222		225 535	79 839	63 591	87	
2001	1 643 075		5 592 434		254 266	94 484	74 117	88	
2002	1 587 580		5 351 135		228 665	75 748	58 403	89	
2003	1 650 662		5 448 841		207 901	72 620	54 653	89	
2004	1 868 413		5 855 904		222 904	91 055	63 053	88	
2005	1 788 318		5 659 581		267 123	92 957	62 926	90	
2006	1 676 681		5 469 413		234 220	93 938	56 917	90	
2007	1 618 699		5 543 155		247 465	86 912	60 129	90	
2008	1 606 843		8 838 540		246 641	84 452	60 000	89	

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	28 008	11 264	229 407		699	178	7 357		87	
2001	27 859	10 818	349 362		619	144	7 103		88	
2002	27 475	10 035	251 788		678	176	7 925		89	
2003	26 842	10 500	230 258		559	145	7 314		89	
2004	29 341	10 951	252 613		644	138	8 113		88	
2005	28 480		232 282		731		7 207		90	
2006	28 087		240 848		668		7 649		90	
2007	23 873		234 318		559		7 715		90	
2008	23 508		199 508	64 449	628		8 078	3 110	89	

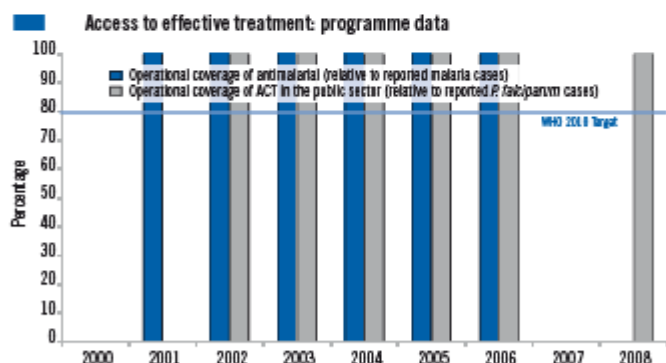
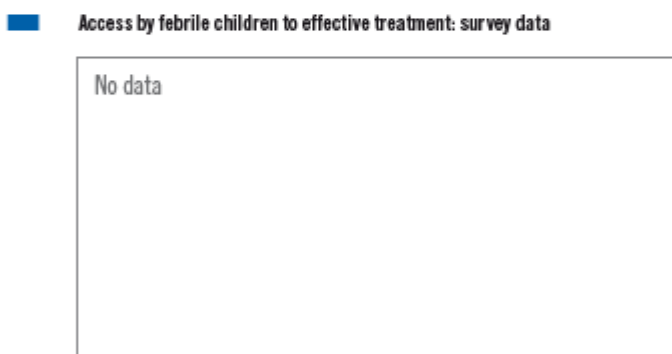
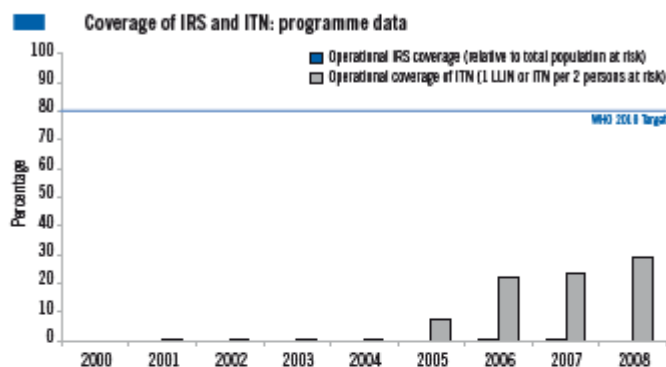
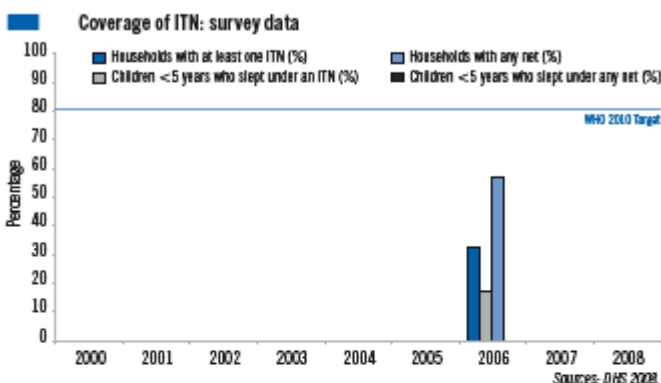
II. INTERVENTION POLICIES AND STRATEGIES

Intervention	WHO-RECOMMENDED 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	2004	Distribution – Antenatal care	No	–
	Targeting all age groups	Yes	2000	Distribution – EPI routine and campaign	No	–
				Targeting children < 5 years and pregnant women	No	–
				ITN distribution is subsidized	Yes	2004
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	Yes	2000	Insecticide-resistance management implemented	No	–
	DDT is used for IRS (public health) only	Yes	2000	Where IRS is conducted, other options are also implemented, e.g. ITN	Yes	2000
				IRS is used for prevention and control of epidemics	Yes	2000
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	Yes	2009			
Case management	Oral artemisinin monotherapies banned (prohibited from registration or removed from the system)	Yes	2000	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	2004
	ACT is free of charge for < 5 years old in the public sector	Yes	2004	ACT is free of charge for patients ≥ 5 years in the public sector	Yes	2004
	Diagnosis of malaria of inpatients is based on parasitological confirmation	Yes	2000	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	2000	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

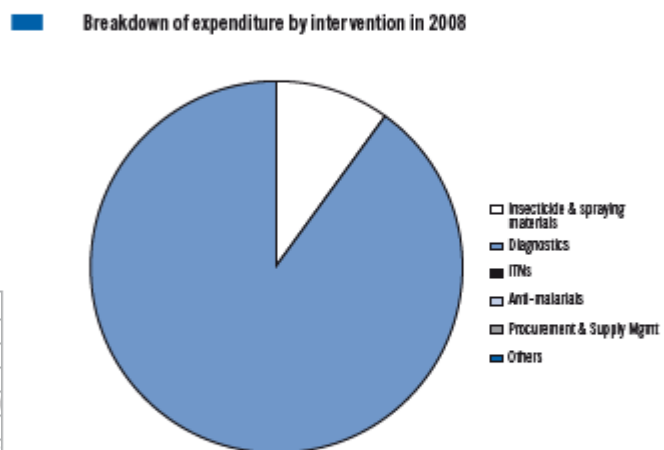
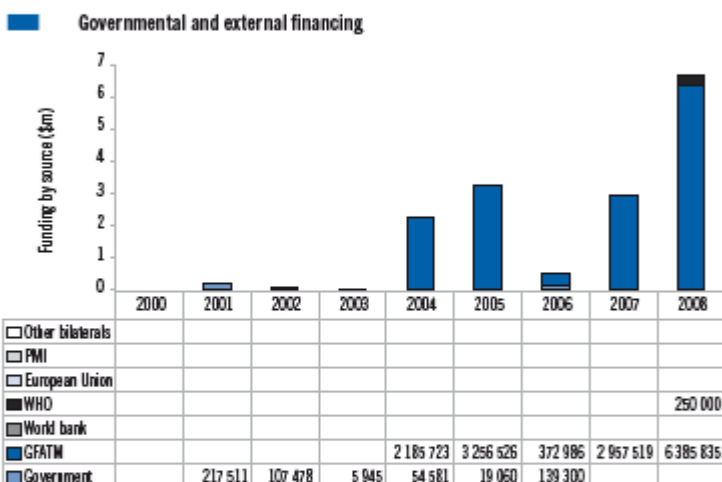
Antimalarial policy	Type of medicine	Year adopted	Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AL	2008							
First-line treatment of <i>P. falciparum</i> (confirmed)	AL	2008							
Treatment failure of <i>P. falciparum</i>	QN(7d)	2008							
Treatment of severe malaria	AM, AS	2008							
Treatment of <i>P. vivax</i>	CQ+PQ(14d)	2008							

III. IMPLEMENTING MALARIA CONTROL



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							6 606	3 719 444	
2002							8 708	9 407 778	89 545
2003							9 154	1 729 167	62 620
2004							8 418	7 958 122	362 071
2005							228 421	3 896 627	321 296
2006		17	-	-	2 000	10 000	461 231	4 822 368	395 185
2007						24 699	53 500		
2008							438 441		110 000

IV. FINANCING MALARIA CONTROL



V. SOURCE OF INFORMATION

PROGRAMME DATA	SURVEY AND OTHER DATA
Reported cases	Surveillance data
Operational coverage of ITNs, IRS and access to medicines	Programme report
Financial data	Programme report
	Insecticide-treated nets (ITN)
	Treatment
	Use of health services
	No surveys
	No surveys
	DHS 1996

SENEGAL

Malaria is endemic throughout the country, and transmission occurs seasonally from June to November. Almost all cases are *P. falciparum*, and, with the introduction of RDTs in 2007, nearly 72% of the suspected cases were parasitologically tested. As a result, the trend in the number of malaria cases decreased from an average of 1.2 million during 2000–2006 to 701 460 cases in 2008 (42% decrease). The numbers of malaria inpatient cases and deaths in children under 5 years decreased by 59% (from 9147 to 3881) and 47% (from 581 to 306), respectively, during the same period. While these decreases must be interpreted with caution (with 94% completeness of reporting in districts in 2008), the recent scale-up of interventions appears to have had a significant impact. The national malaria control programme delivered 400 000 LLINs in 2006 and 1.6 million in 2008 (half of which were distributed during a mass campaign). Over 233 000 households were sprayed in 2008, protecting nearly 635 000 people at risk (5%). In the 2008 malaria indicator survey, 63% of households had an ITN, 46% of children under 5 had slept under an ITN the previous night and 4.6% of febrile children received an ACT. The programme delivered about 990 000 treatment courses of ACT in 2007 and 320 000 in 2008, adequate to treat roughly half the reported cases in the public sector. There is some evidence, from routine surveillance that the numbers of malaria inpatient cases and deaths are falling; however, this report should be interpreted with caution, because of possible effects of the introduction of diagnostics and a probable change in case definition. While funding has increased (from the Government, the Global Fund, the United States President's Malaria Initiative and other agencies), the national malaria control programme reported that US\$ 23 million were spent on malaria during 2005–2008.

I. EPIDEMIOLOGICAL PROFILE

Population, endemicity and malaria burden

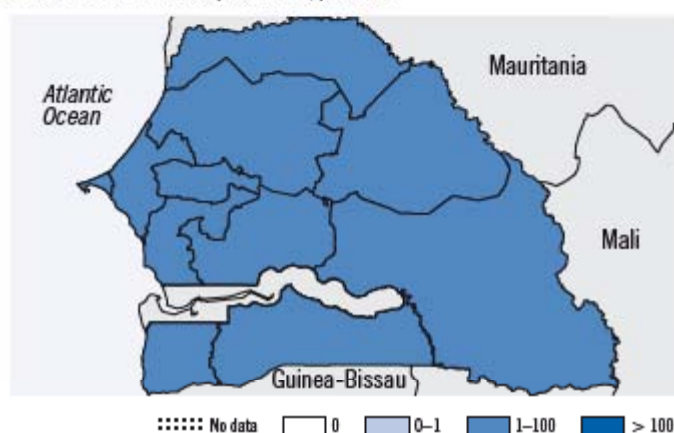
Population (in thousands)	2008	%
All age groups	12 211	
< 5 years	2 046	17
≥ 5 years	10 165	83
Population by malaria endemicity (in thousands)		
High transmission ≥ 1/1000	11 703	96
Low transmission (0–1/1000)	509	4
Malaria-free (0 cases)	0	0
Rural population	7 046	58

Vector and parasite profiles

Major <i>Anopheles</i> species	<i>gambiae</i> , <i>arabiensis</i> , <i>funestus</i> , <i>brochieri</i> , <i>coustanti</i> , <i>flavicocta</i> , <i>hancocki</i> , <i>melas</i> , <i>nili</i> , <i>pharoensis</i>
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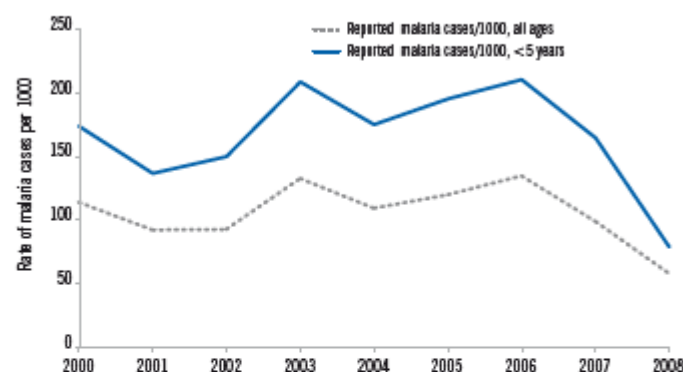
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>
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Stratification of burden (reported cases, per 1000)

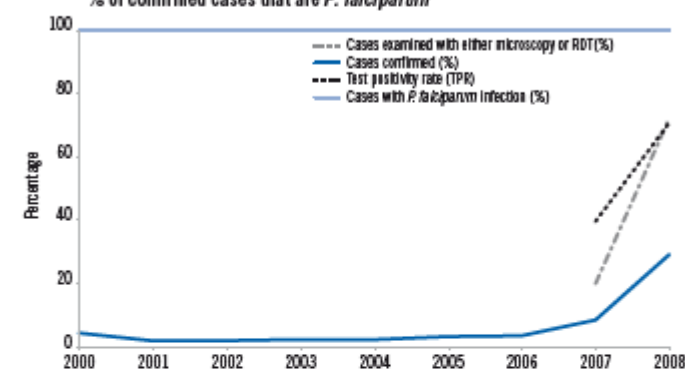


Trends in malaria morbidity and mortality

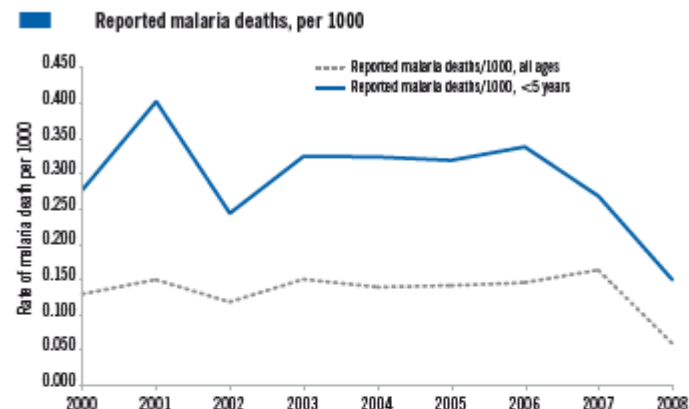
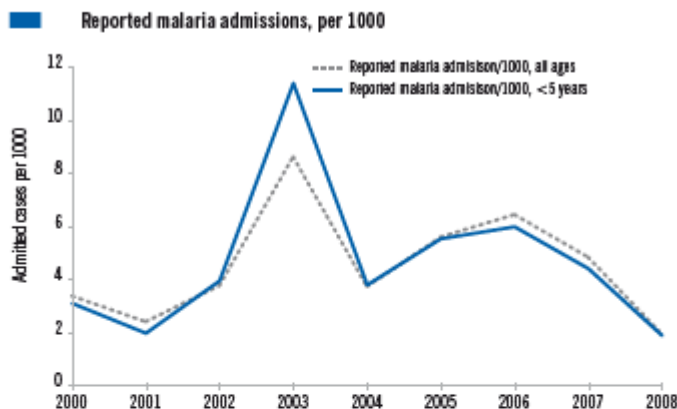
Reported malaria cases, per 1000



Rate of examination, case confirmation, malaria test positivity, % of confirmed cases that are *P. falciparum*



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	1 123 377	299 210	3 463 849	1 096 685		44 959	44 959	84	
2001	931 682	239 508	2 608 245	712 816		14 261	14 261	72	
2002	960 478	267 341	2 878 312	813 345		15 261	15 261	75	
2003	1 414 383	379 339	3 671 650	968 408		28 272	28 272	85	
2004	1 195 402	324 620	3 744 390	985 149		23 171	23 171	87	
2005	1 346 158	370 061	4 064 305	1 059 420		38 746	38 746	95	
2006	1 555 310	408 588	4 632 716	1 191 498		49 366	49 366	97	
2007	1 170 234	327 867	5 260 160	1 380 054	230 186	95 169	95 169	98	
2008	701 460	160 657	4 909 307	1 214 122	505 045	202 466	202 466	94	



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	33 465	5 365	96 347	18 629	1 275	477	3 441	1 379		
2001	24 444	3 474	59 059	10 281	1 515	705	5 097	1 775		
2002	39 315	7 074	105 462	22 840	1 226	435	4 678	1 318		
2003	92 356	20 763	170 000	37 477	1 602	590	6 040	1 556		
2004	40 993	7 060	107 214	20 301	1 524	600	6 172	1 606		
2005	63 133	10 524	175 107	30 624	1 587	604	7 316	1 806		
2006	74 669	11 662	214 449	34 660	1 678	656	9 077	2 361		
2007	57 638	8 815	195 083	28 357	1 935	534	10 650	2 487		
2008	23 719	3 881	189 165	27 662	722	306	10 114	2 744		

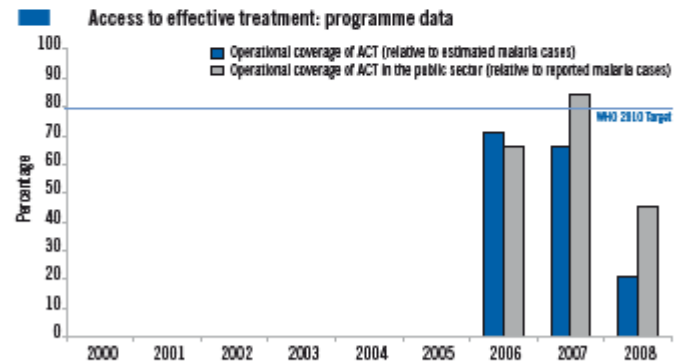
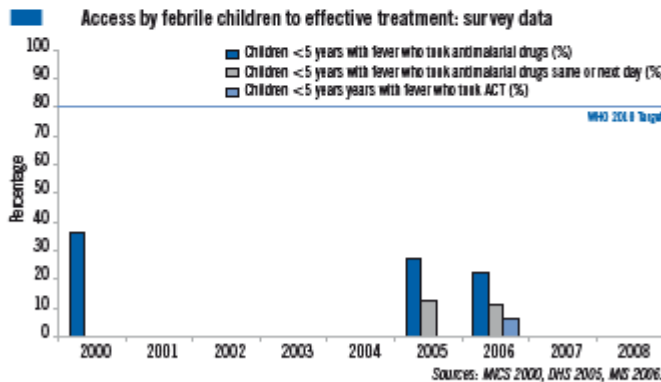
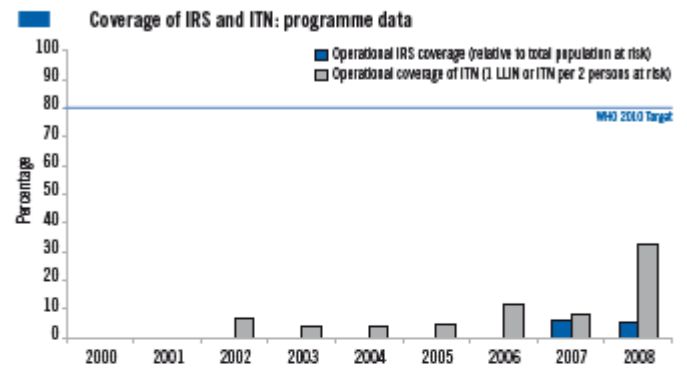
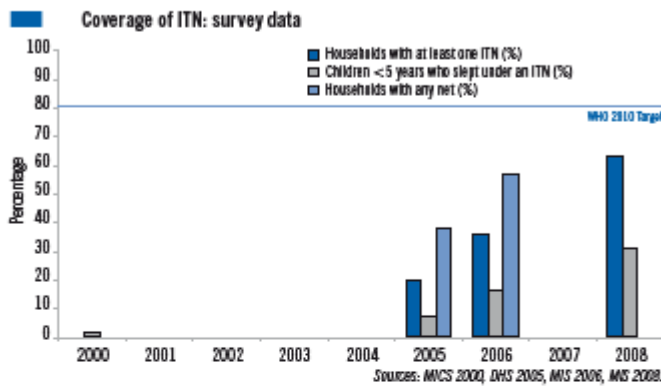
II. INTERVENTION POLICIES AND STRATEGIES

Intervention	WHO-RECOMMENDED 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	1998	Distribution – Antenatal care	Yes	2005
	Targeting all age groups	Yes	1998	Distribution – EPI routine and campaign	Yes	–
				Targeting children < 5 years and pregnant women	Yes	1998
				ITN distribution is subsidized	Yes	2000
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	Yes	2007	Insecticide-resistance management implemented	Yes	2000
	DDT is used for IRS (public health) only	No	–	Where IRS is conducted, other options are also implemented, e.g. ITN	Yes	2007
				IRS is used for prevention and control of epidemics	No	–
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	Yes	2004			
Case management	Oral artemisinin monotherapies banned (prohibited from registration or removed from the system)	No	–	Parasitological confirmation for patients ≥ 5 years only	No	–
	Parasitological confirmation for patients of all ages	Yes	2007	Malaria diagnosis is free of charge in the public sector	Yes	2007
	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	Yes	2007	ACT is delivered at community level through community agents (beyond the health facilities)	Yes	2007
	Pre-referral treatment with quinine or artemether IM or artesunate suppositories	Yes	2005	Uncomplicated malaria cases are admitted	No	–
	Oversight regulation of case management in the private sectors	No	–			
	RDTs used at community level	Yes	2008			

Results of therapeutic efficacy tests

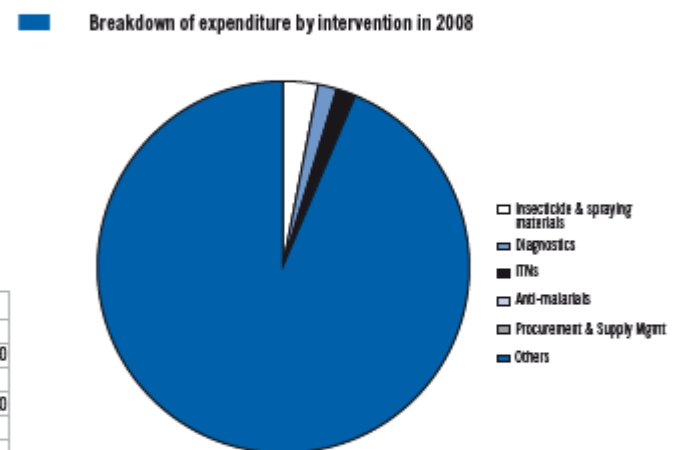
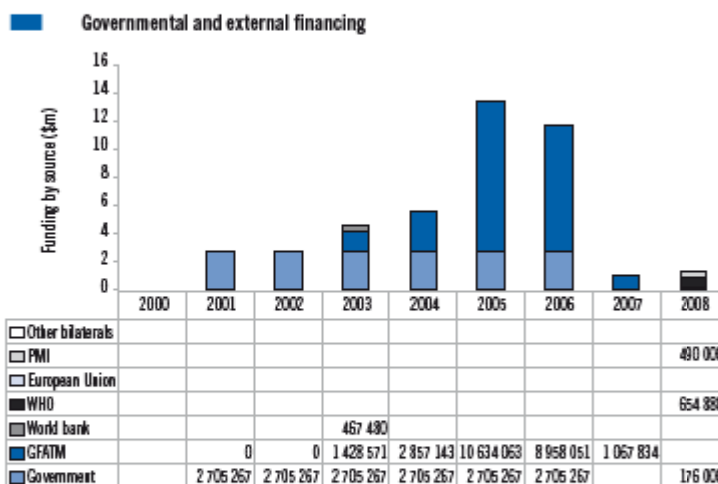
Antimalarial policy	Type of medicine	Year adopted	Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AS + AQ	2005							
First-line treatment of <i>P. falciparum</i> (confirmed)	AL, AS + AQ	2005							
Treatment failure of <i>P. falciparum</i>	–	–							
Treatment of severe malaria	QN(7d)	2005							
Treatment of <i>P. vivax</i>	–	–							

III. IMPLEMENTING MALARIA CONTROL



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								931 682	
2002							350 000	960 478	
2003							125 409	1 414 383	
2004							223 731	1 195 402	
2005	14	9	-	-			402 706	1 346 158	
2006		17	-	-			342 328	1 555 310	1 036 872
2007						678 971		990 141	990 141
2008						635 666	1 572 261	320 335	320 335

IV. FINANCING MALARIA CONTROL



V. SOURCE OF INFORMATION

PROGRAMME DATA	SURVEY AND OTHER DATA
Reported cases	Surveillance data
Operational coverage of ITNs, IRS and access to medicines	Insecticide-treated nets (ITN)
Financial data	Treatment
	Use of health services

Sources: MICS 2000, DHS 2005, MIS 2006, MS 2008

SUDAN

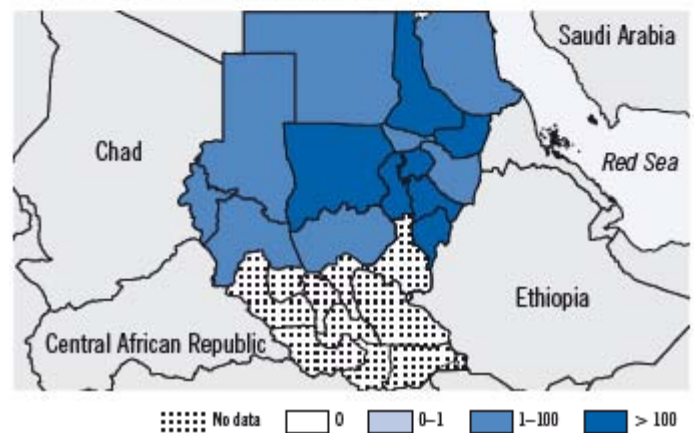
Malaria transmission in the northern, eastern and western states of Sudan is low-to-moderate, highly seasonal and occasionally epidemic. In the southern, malaria transmission is generally perennial with moderate-to-high intensity. The data presented in this report are from 15 states in the north, east and west of the country as the information from the southern states was incomplete. In the northern, eastern and western states, in 2008, there were 3 073 966 reported malaria cases and 1 125 deaths. In the states from which information is complete, more than 95% of malaria cases are due to *P. falciparum*. In these areas, the malaria control programme distributed over 3.3 million long-lasting insecticide-impregnated nets between 2006 and 2008. About 90% of public health facilities provide ACTs free of charge; in 2008, about 3 million treatment courses were delivered, enough to treat all reported cases. During the past 5 years, the Government has allocated more than US\$ 31 million for malaria control, complemented by more than US\$ 69 million from the Global Fund.

I. EPIDEMIOLOGICAL PROFILE

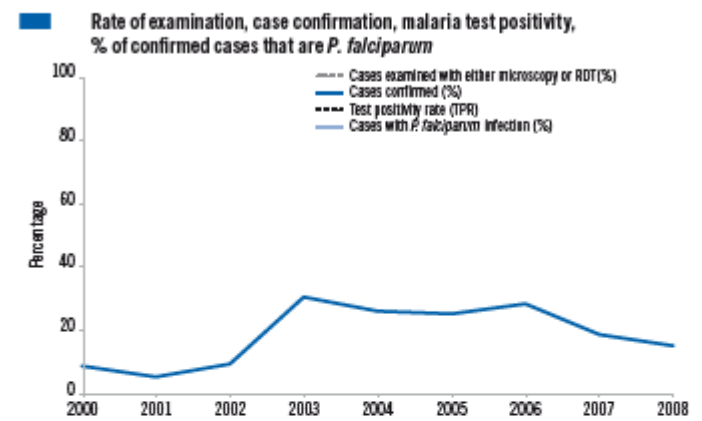
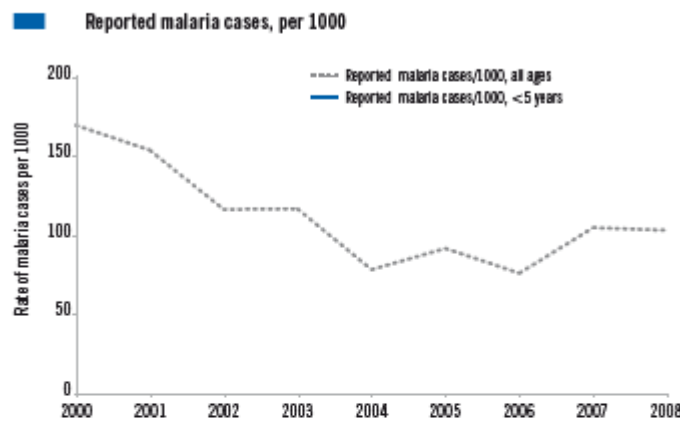
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	41 348	
< 5 years	5 836	14
≥ 5 years	35 511	86
Population by malaria endemicity (in thousands)		
	2008	%
High transmission ≥ 1/1000	6 808	16
Low transmission (0–1/1000)	34 501	83
Malaria-free (0 cases)	40	0
Rural population	23 372	57
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>arabiensis</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

Stratification of burden (reported cases, per 1000)

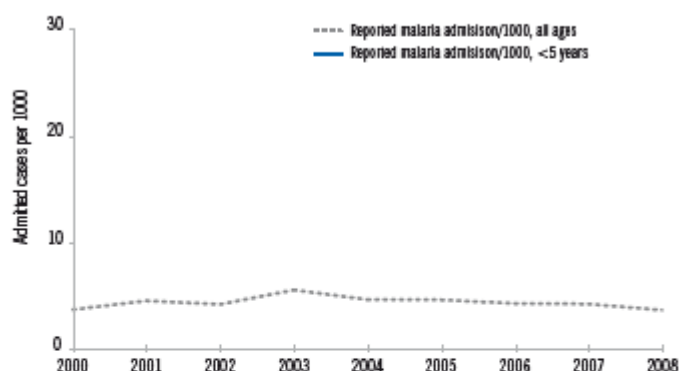


Trends in malaria morbidity and mortality

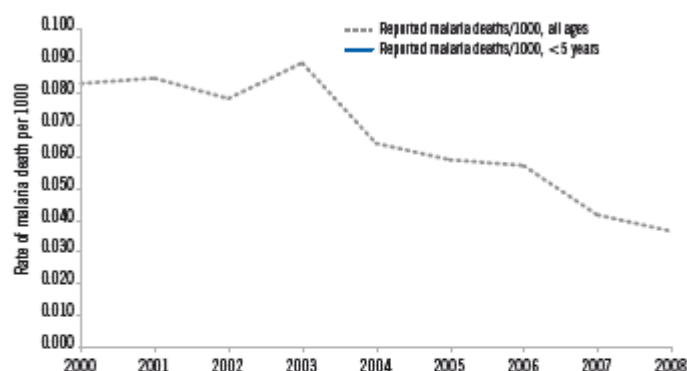


Year	Reported malaria cases, all ages	Reported malaria cases, < 5 years	All-cause outpatient consultations, all ages	All-cause outpatient consultations, < 5 years	Examined	Positive	<i>P. falciparum</i>	Reporting completeness of outpatient health facilities (%)	Reporting completeness of districts (%)
2000	4 428 277	1 159 328	25 151 371	6 255 772		464 007			
2001	4 105 613	868 893	20 337 398	5 700 642		323 402			
2002	3 167 456	760 572	20 486 801	5 058 783		393 606			
2003	3 237 006	676 525	19 628 283	4 499 077		1 085 953			
2004	2 214 296	547 011	18 285 220	4 401 768		668 484			
2005	2 648 310	654 044	17 462 890	4 347 518		761 034			
2006	2 243 064	379 172	8 703 556	1 760 093		721 233			
2007	3 166 661	771 419	13 988 723	2 879 177		686 908		81	
2008	3 185 930	886 294	13 745 635	3 205 353		569 296		83	

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	95 450	26 542	365 740	74 499	2 162	798	11 344	3 419		
2001	119 911	34 750	466 460	115 143	2 252	816	14 207	4 855		
2002	113 056	34 216	494 358	136 117	2 125	700	15 057	5 267		
2003	152 686	45 736	724 630	194 919	2 479	863	19 267	7 031		
2004	130 585	38 495	724 695	192 577	1 814	749	17 771	6 654		
2005	132 617	41 725	811 645	206 343	1 703	570	19 654	6 116		
2006	125 550	39 615	845 099	222 803	1 686	565	19 353	6 447		
2007	126 480	38 547	927 941	248 714	1 254	446	25 954	6 779	81	
2008	111 934	40 304	791 066	199 151	1 125	359	17 311	5 360	83	

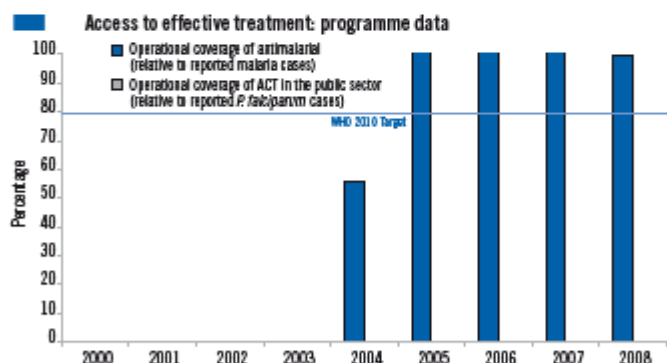
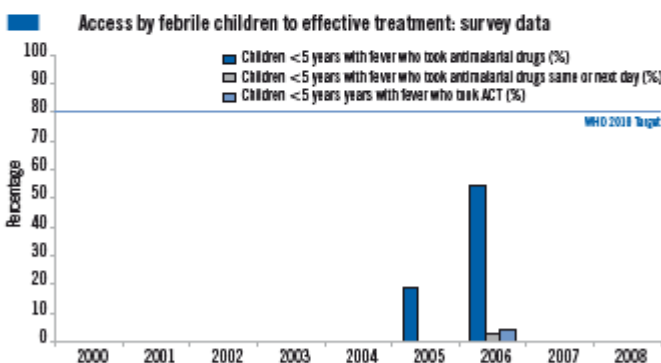
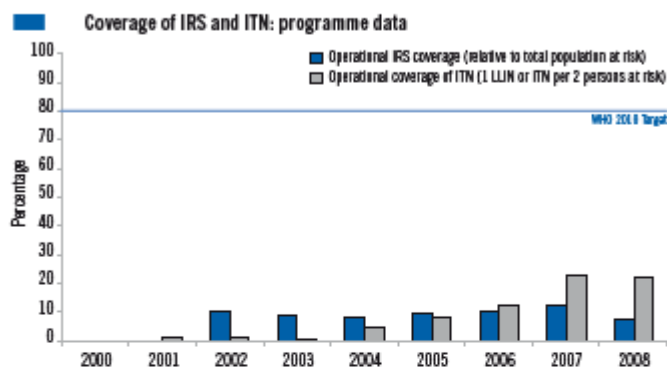
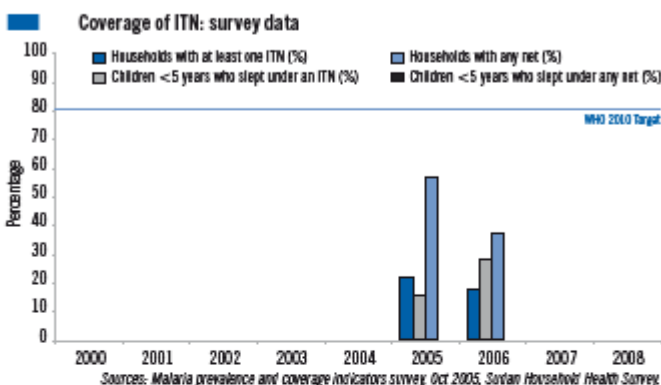
II. INTERVENTION POLICIES AND STRATEGIES

Intervention	WHO-RECOMMENDED 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	2001	Distribution – Antenatal care	Yes	2007
	Targeting all age groups	Yes	2006	Distribution – EPI routine and campaign	Yes	2008
				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	Yes	1999
	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	1998
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	Yes	2005			
Case management	Oral artemisinin monotherapies banned (prohibited from registration or removed from the system)	Yes	2004	Parasitological confirmation for patients ≥ 5 years only	Yes	2000
	Parasitological confirmation for patients of all ages	Yes	2000	Malaria diagnosis is free of charge in the public sector	No	–
	ACT is free of charge for < 5 years old in the public sector	Yes	2005	ACT is free of charge for patients ≥ 5 years in the public sector	Yes	2004
	Diagnosis of malaria of inpatients is based on parasitological confirmation	Yes	2001	ACT is delivered at community level through community agents (beyond the health facilities)	Yes	2007
	Pre-referral treatment with quinine or artemether IM or artesunate suppositories	Yes	2004	Uncomplicated malaria cases are admitted	No	–
	Oversight regulation of case management in the private sectors	Yes	2004			
	RDTs used at community level	Yes	2005			

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)	AS+SP	2004							
First-line treatment of <i>P. falciparum</i> (confirmed)	AS+SP	2004							
Treatment failure of <i>P. falciparum</i>	AL	2004							
Treatment of severe malaria	QN (7d), AM (7d), AM (3d) + AS+SP	2004							
Treatment of <i>P. vivax</i>	CQ+PQ(14d)	2004							

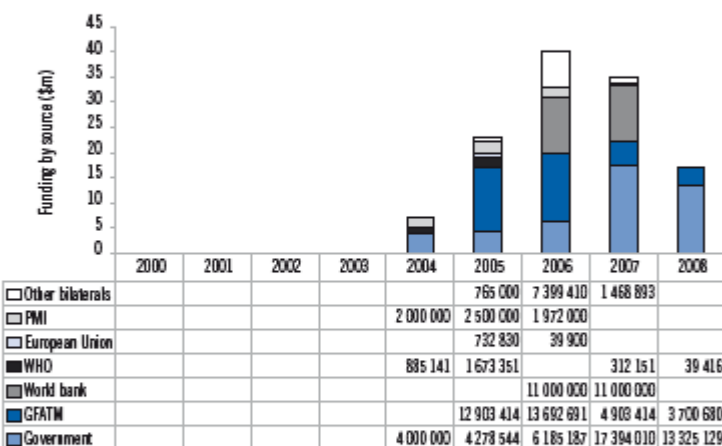
III. IMPLEMENTING MALARIA CONTROL



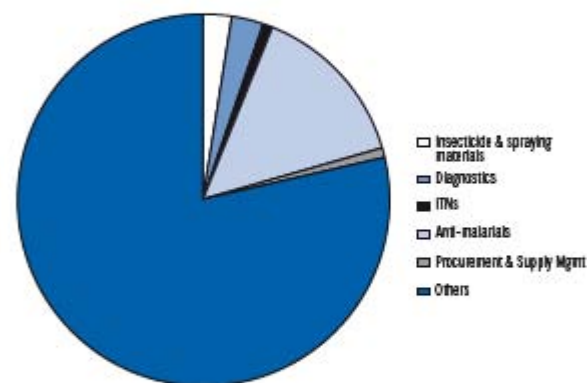
Year	Pregnant women who slept under any net (%)	Pregnant women who slept under an ITN (%)	Children < 5 years with fever (%)	Febrile children < 5 years who sought treatment in HF (%)	Number of households protected by IRS	Number of people protected by IRS	Number of ITNs and/or LLINs	Number of 1st-line treatment courses received	Number of ACT treatment courses received
2000									
2001							135 000		
2002					565 605	2 828 025	160 600		
2003					494 795	2 473 973	76 500		
2004					465 454	2 327 272	665 400	1 165 019	
2005		13	—	—	555 311	2 776 555	752 900	3 613 133	
2006			—	—	595 486	2 977 432	796 199	2 888 943	2 814 000
2007					641 123	3 846 738	1 910 000	3 337 103	2 677 199
2008					456 337	2 281 687	1 806 540	3 073 996	3 073 996

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	Insecticide-treated nets (ITN)	Malaria prevalence and coverage indicators survey, Oct 2005, Sudan Household Health Survey
Operational coverage of ITNs, IRS and access to medicines	Programme report	Treatment	0
Financial data	Programme report	Use of health services	0

SURVEY AND OTHER DATA

TAJIKISTAN

Malaria transmission due to *P. vivax* and *P. falciparum* is seasonal, from June to October, with areas below 2500 m most at risk. The number of malaria cases has decreased significantly, from over 19 000 cases in 2000 to only 318 cases in 2008, including two *P. falciparum* cases reported in the southern and central parts of the country. Tajikistan shows a strong political commitment to the Tashkent Declaration and has cross-border collaboration with Afghanistan and other countries of Central Asia. IRS is the principal method of mosquito control, covering over 630 000 people at risk in 2008 in focal areas. Additionally, about 19 000 LLINs were distributed, and the *Gambusia* fish was introduced into 795 ha of water reservoirs. All malaria cases are treated with full doses of chloroquine and primaquine. While malaria control is funded primarily by the Government, the country recently secured a Global Fund grant of US\$ 5.4 million to interrupt *P. vivax* transmission by 2015.

I. EPIDEMIOLOGICAL PROFILE

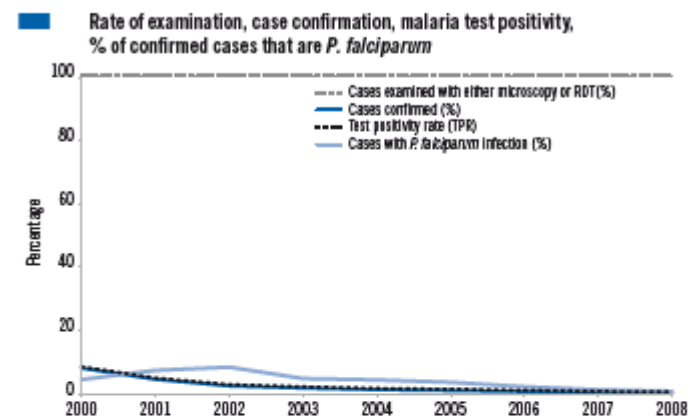
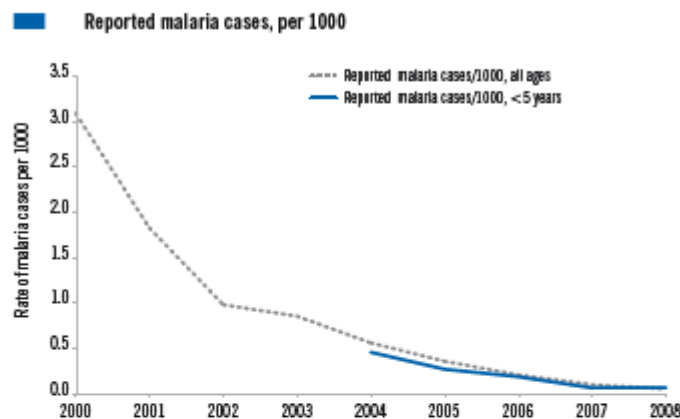
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	6 836	
< 5 years	871	13
≥ 5 years	5 965	87
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	195	3
Low transmission (0–1/1000)	5 007	73
Malaria-free (0 cases)	1 634	24
Rural population	5 031	74
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>hyrcanus</i> , <i>maculipennis</i> , <i>martinius</i> , <i>puicheimius</i> , <i>superpictus</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

Stratification of burden (reported cases, per 1000)

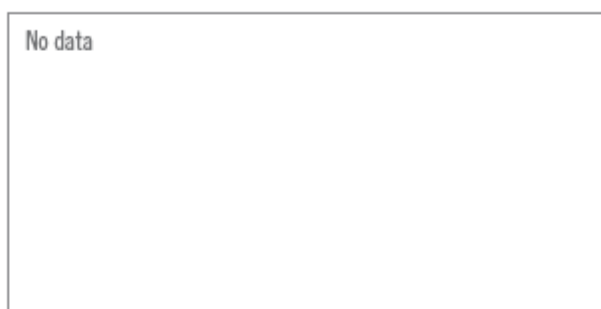


Trends in malaria morbidity and mortality

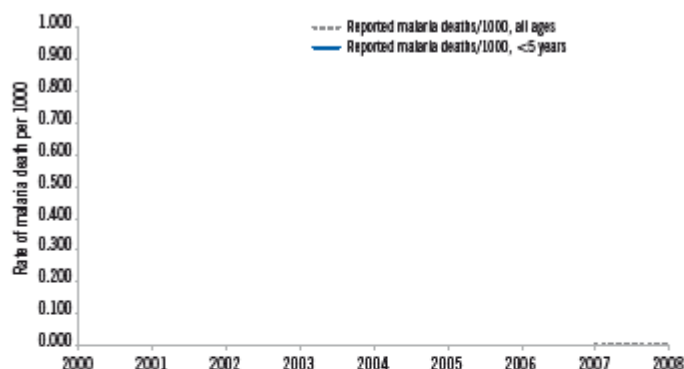


Year	Reported malaria cases, all ages	Reported malaria cases, < 5 years	All-cause outpatient consultations, all ages	All-cause outpatient consultations, < 5 years	Examined	Positive	<i>P. falciparum</i>	Reporting completeness of outpatient health facilities (%)	Reporting completeness of districts (%)
2000	19 064				233 785	19 064	831	100	100
2001	11 387				248 565	11 387	826	100	100
2002	6 160				244 632	6 160	509	100	100
2003	5 428				296 123	5 428	252	100	100
2004	3 588	392			272 743	3 588	151	100	100
2005	2 309	231			216 197	2 309	81	100	100
2006	1 344	159			175 894	1 344	28	100	100
2007	635	53	19 420	525	159 232	635	7	100	100
2008	318	56	29 043	834	158 068	318	2	100	100

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									100	100
2001									100	100
2002									100	100
2003									100	100
2004									100	100
2005									100	100
2006									100	100
2007			740 502						100	100
2008			830 394						100	100

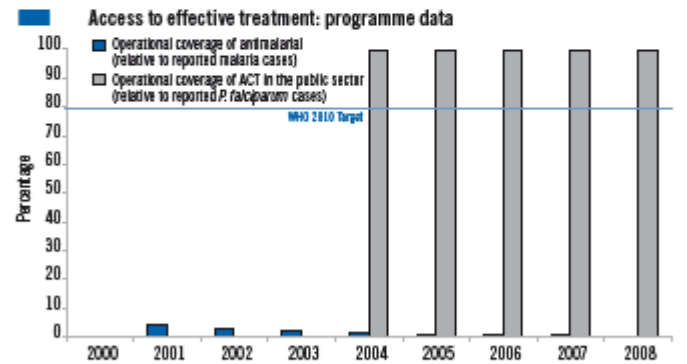
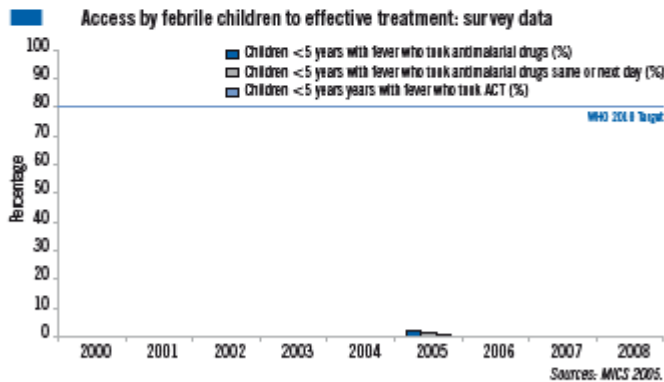
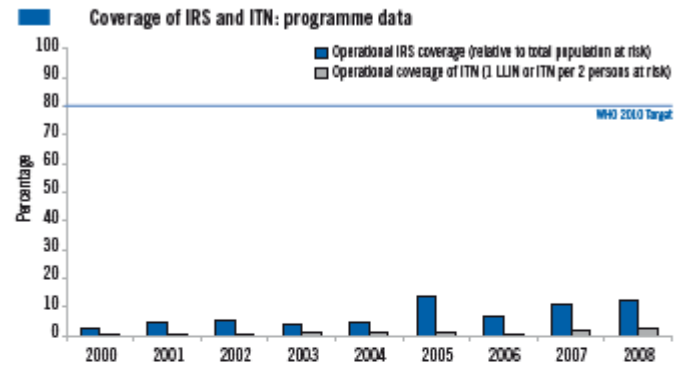
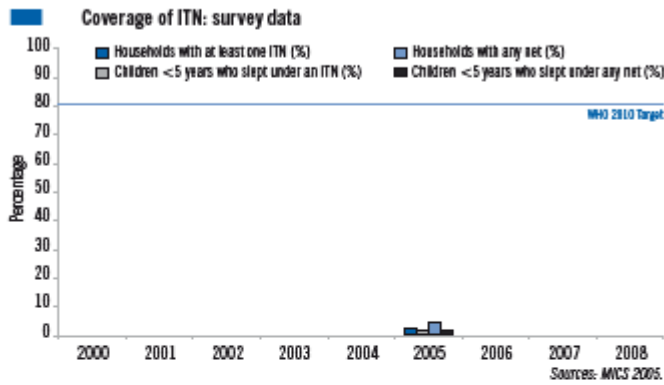
II. INTERVENTION POLICIES AND STRATEGIES

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

Results of therapeutic efficacy tests

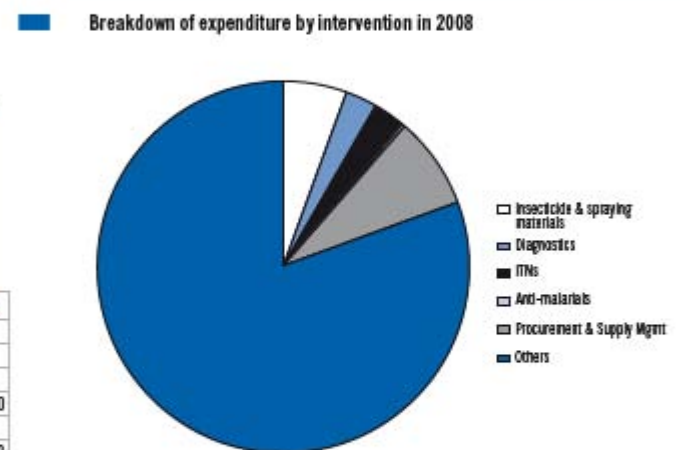
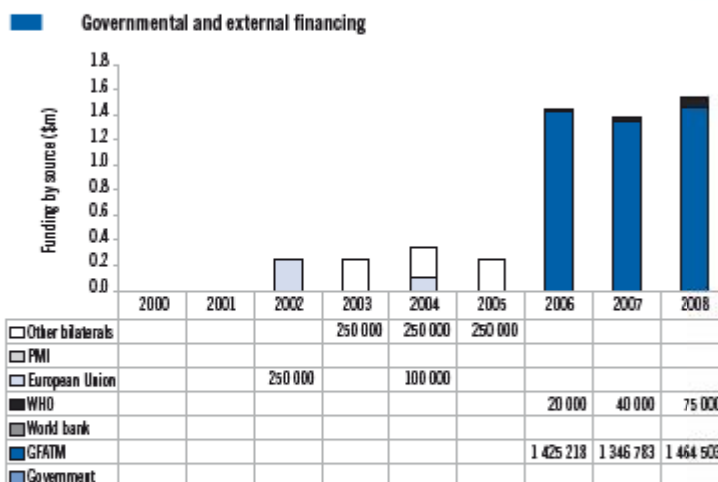
Antimalarial policy	Type of medicine	Year adopted	Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	–	–							
First-line treatment of <i>P. falciparum</i> (confirmed)	AL, AS + SP	2008							
Treatment failure of <i>P. falciparum</i>	QN(7d)	2004							
Treatment of severe malaria	QN(7d)	2004							
Treatment of <i>P. vivax</i>	CQ + PQ(14d)	2004							

III. IMPLEMENTING MALARIA CONTROL



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					20 450	122 700	16 779	13	
2001					37 580	221 480	14 188	11 387	
2002					51 800	264 240	10 625	6 160	
2003					30 323	183 280	19 986	5 428	
2004					81 950	238 651	22 952	3 588	151
2005			-	-	71 454	685 130	19 993	2 309	81
2006					58 410	350 460	15 150	1 344	28
2007					183 464	552 912	26 438	635	7
2008					624 000	632 622	19 494	318	2

IV. FINANCING MALARIA CONTROL



V. SOURCE OF INFORMATION

PROGRAMME DATA	SURVEY AND OTHER DATA
Reported cases	Surveillance data
Operational coverage of ITNs, IRS and access to medicines	Insecticide-treated nets (ITN)
Financial data	Treatment
	Use of health services
	MICS 2005
	MICS 2005
	MICS 2005

TURKEY

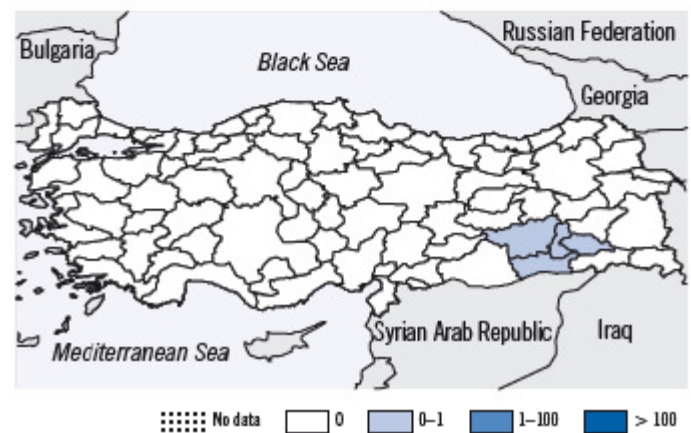
Before the 1970s, *P. falciparum* was the dominant parasite; however, since implementation of control activities, malaria transmission is now due exclusively to *P. vivax* and is seasonal, occurring from June to October. The number of malaria cases decreased from over 9 465 in 2000 to only 136 in 2008, of which 49 were imported. Although the number of malaria cases and their foci have decreased dramatically, transmission continues in new and residual foci in five south-eastern provinces of the country, on a seasonal basis. In 2008, all the local cases were found in five provinces (Diyarkabir, Siirt, Mardin, Sanliurfa and Batman), and the case rate was 0.003–0.005 per 1000. Turkey shows a strong political commitment to the Tashkent Declaration, endorsed in 2005, and malaria surveillance activities have been intensified all over the country, with priority given to the provinces in south-eastern Anatolia. All foci of malaria are determined and totally covered by IRS. Malaria elimination activities are supported by the Ministry of Health, other Government entities and WHO. In 2008, 624 000 households were sprayed, and 632 000 people living at risk for malaria were protected by IRS. A national malaria elimination strategy and a relevant plan of action with the goal of interrupting transmission by 2012 and eliminating the disease by 2105 have been prepared and are to be launched.

I. EPIDEMIOLOGICAL PROFILE

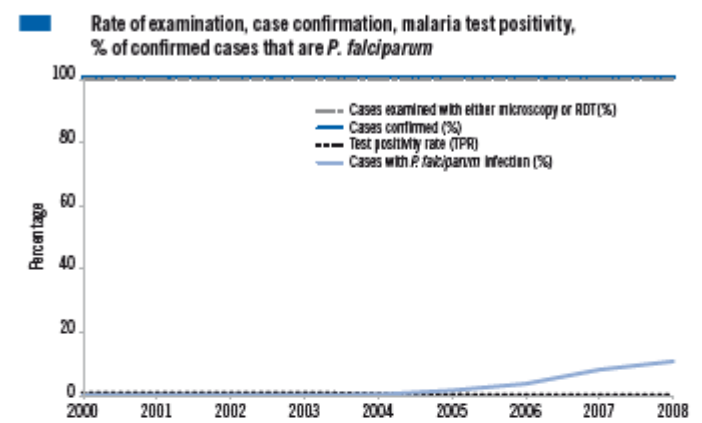
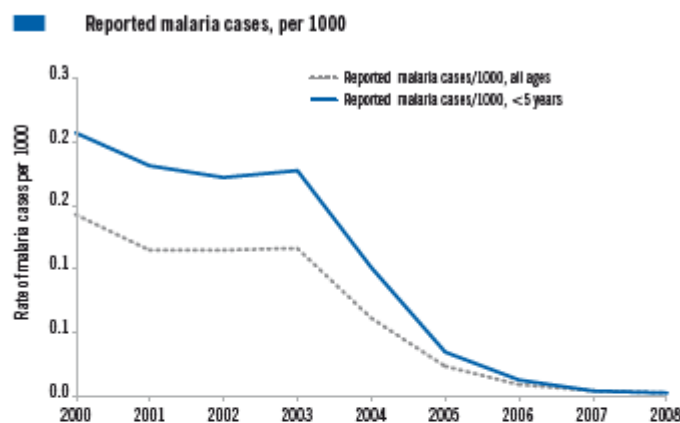
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	73 914	
< 5 years	6 543	9
≥ 5 years	67 372	91
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	0	0
Low transmission (0–1/1000)	4 757	6
Malaria-free (0 cases)	69 157	94
Rural population	23 120	31
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>sacharovi</i>	
<i>Plasmodium</i> species	<i>vivax</i> risk only	

Stratification of burden (reported cases, per 1000)

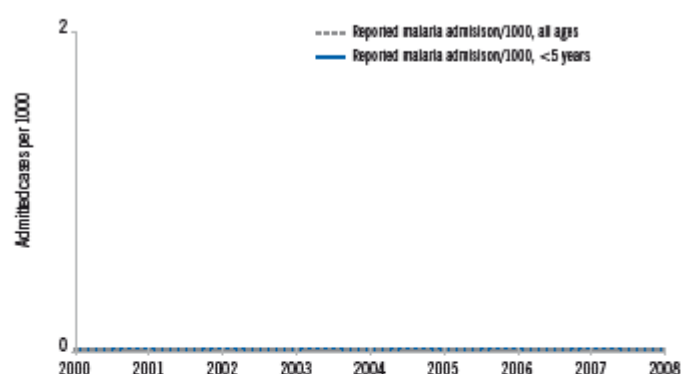


Trends in malaria morbidity and mortality

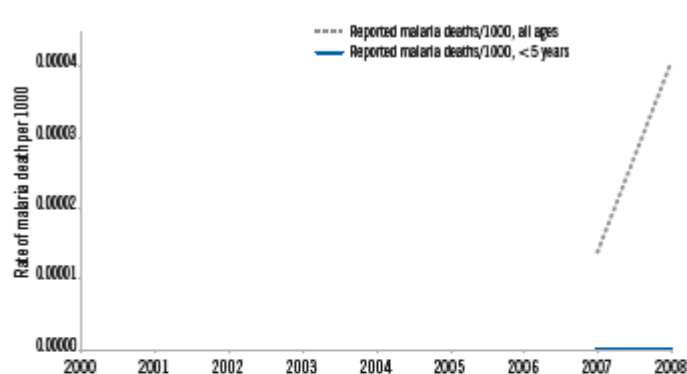


Year	Reported malaria cases, all ages	Reported malaria cases, < 5 years	All-cause outpatient consultations, all ages	All-cause outpatient consultations, < 5 years	Examined	Positive	<i>P. falciparum</i>	Reporting completeness of outpatient health facilities (%)	Reporting completeness of districts (%)
2000	9 465	1 433	161 051 503		253 562	9 465	7		675
2001	7 710	1 243	182 177 063		234 250	7 710	11		675
2002	7 814	1 165	184 238 055		193 970	7 814	12		675
2003	8 025	1 185	201 112 942		183 748	8 025	12		675
2004	4 278	666	232 906 560		169 592	4 278	13		675
2005	1 627	224	295 860 209		143 899	1 627	32		675
2006	605	80	341 676 429		134 146	605	29		675
2007	250	24	398 121 987		96 938	250	29		675
2008	136	13	444 606 049		55 856	136	23		675

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	7		5 075 170				86 575			
2001	11		5 290 024				86 441			
2002	12		5 508 263				92 489			
2003	13		5 736 517				92 391			
2004	13	1	6 440 800				99 795			
2005	32		7 011 514				63 727			
2006	29	1	7 764 651				110 722			
2007	29		8 720 289		1		114 262			
2008	23				3		124 117			

II. INTERVENTION POLICIES AND STRATEGIES

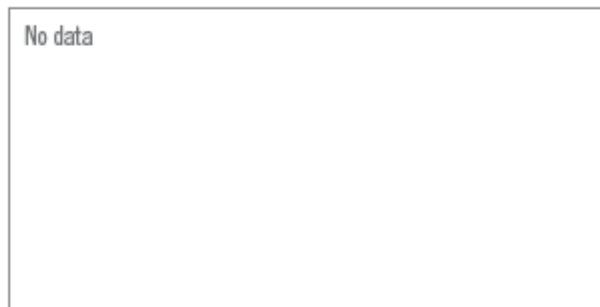
Intervention	WHO-RECOMMENDED POLICIES / STRATEGIES	WHO-RECOMMENDED POLICIES / STRATEGIES		OPTIONAL POLICIES / STRATEGIES	OPTIONAL POLICIES / STRATEGIES	
		Yes or No	Year adopted		Yes or No	Year adopted
Insecticide-treated nets (ITN)	Distribution of ITN/LLINs – Free	No	–	Distribution – Antenatal care	No	–
	Targeting all age groups	No	–	Distribution – EPI routine and campaign	No	–
				Targeting children < 5 years and pregnant women	No	–
				ITN distribution is subsidized	No	–
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	Yes	2000	Insecticide-resistance management implemented	Yes	2000
	DDT is used for IRS (public health) only	No	–	Where IRS is conducted, other options are also implemented, e.g. ITN	No	–
				IRS is used for prevention and control of epidemics	Yes	2000
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	No	–			
Case management	Oral artemisinin monotherapies banned (prohibited from registration or removed from the system)	No	–	Parasitological confirmation for patients ≥ 5 years only	No	–
	Parasitological confirmation for patients of all ages	Yes	2000	Malaria diagnosis is free of charge in the public sector	Yes	2000
	ACT is free of charge for < 5 years old in the public sector	Yes	2009	ACT is free of charge for patients ≥ 5 years in the public sector	Yes	2009
	Diagnosis of malaria of inpatients is based on parasitological confirmation	Yes	2000	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	No	–	Uncomplicated malaria cases are admitted	No	–
	Oversight regulation of case management in the private sectors	Yes	2000			
	RDTs used at community level	No	–			

Results of therapeutic efficacy tests

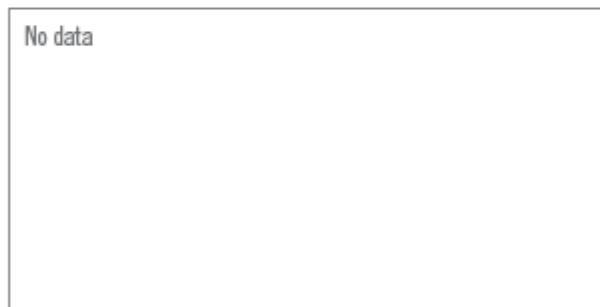
Antimalarial policy	Type of medicine	Year adopted	Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	–	–							
First-line treatment of <i>P. falciparum</i> (confirmed)	–	–							
Treatment failure of <i>P. falciparum</i>	–	–							
Treatment of severe malaria	–	–							
Treatment of <i>P. vivax</i>	CQ+PQ(14d)	–							

III. IMPLEMENTING MALARIA CONTROL

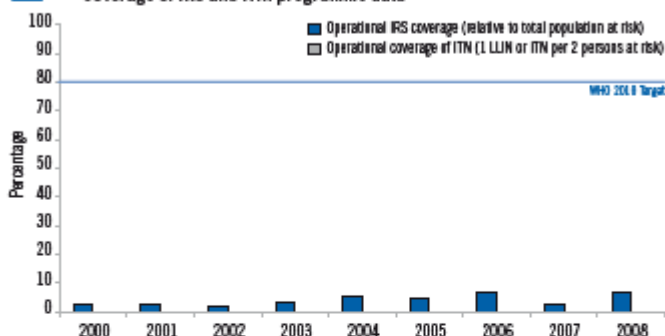
Coverage of ITN: survey data



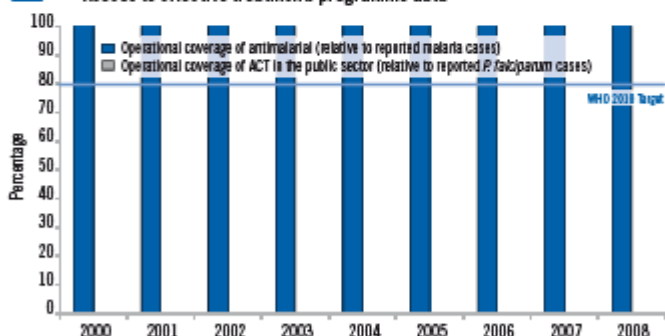
Access by febrile children to effective treatment: survey data



Coverage of IRS and ITN: programme data



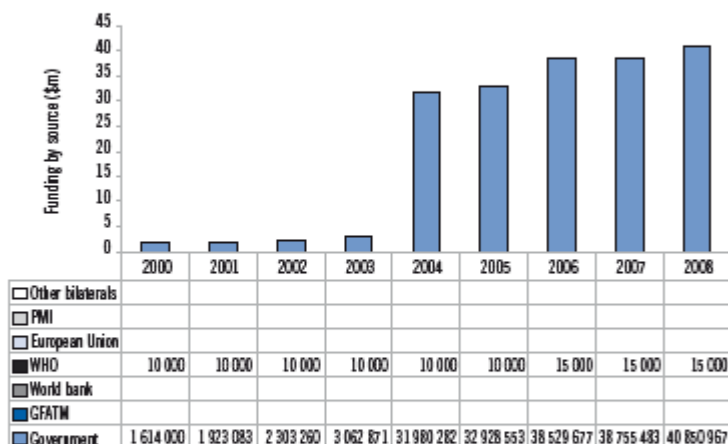
Access to effective treatment: programme data



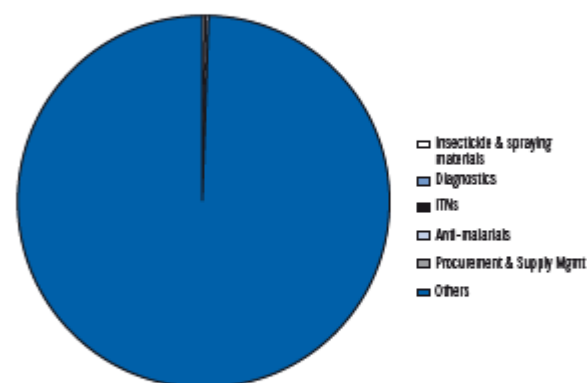
Year	Pregnant women who slept under any net (%)	Pregnant women who slept under an ITN (%)	Children < 5 years with fever (%)	Febrile children < 5 years who sought treatment in HF (%)	Number of households protected by IRS	Number of people protected by IRS	Number of ITNs and/or LLINs	Number of 1st-line treatment courses received	Number of ACT treatment courses received
2000					24 213	125 715		30 800	
2001					25 746	128 730		30 500	
2002					14 334	71 670		24 500	
2003					28 941	144 705		28 500	
2004					50 184	250 920		10 660	
2005					41 370	206 850		17 000	
2006					62 669	313 345		2 600	
2007					21 901	109 505		2 600	
2008					65 475	327 375		980	

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	Insecticide-treated nets (ITN)	No surveys
Operational coverage of ITNs, IRS and access to medicines	Programme report	Treatment	No surveys
Financial data	Programme report	Use of health services	DHS 2003

SURVEY AND OTHER DATA

UGANDA

Uganda had an estimated 12 million malaria cases in 2006. Transmission occurs all year round in most parts of the country. On average, 10.7 million malaria cases were reported annually during 2004–2008, with no declining trend. About 20% of the suspected cases were parasitologically tested in 2007. The fluctuating numbers of inpatient malaria cases and deaths reported in 2006–2008, due to inconsistent and incomplete surveillance, do not provide a basis for evaluating incidence trends, although the programme reports show a decrease in cases and deaths between 2005 and 2006. The programme delivered nearly 5.9 million LLINs during 2006–2008. Implementation of IRS, which was started in 2006, covered 500 000 households and protected 1 858 149 people at risk in 2008. Nearly 17 million ACT courses were reportedly delivered in 2007 and another 6.4 million in 2008. In the 2006 demographic and health survey, 22% of households owned an ITN, 13% of children slept under an ITN and 3% of febrile children received ACT. Funding for malaria control exceeded US\$ 40 million in 2008, supported by the Government (US\$ 20 million) and the United States President's Malaria Initiative (US\$ 21 million). Although Global Fund grants were significant during 2004–2006, implementation of the latest grant (round 7) has been delayed.

I. EPIDEMIOLOGICAL PROFILE

Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	31 657	
< 5 years	6 182	20
≥ 5 years	25 475	80

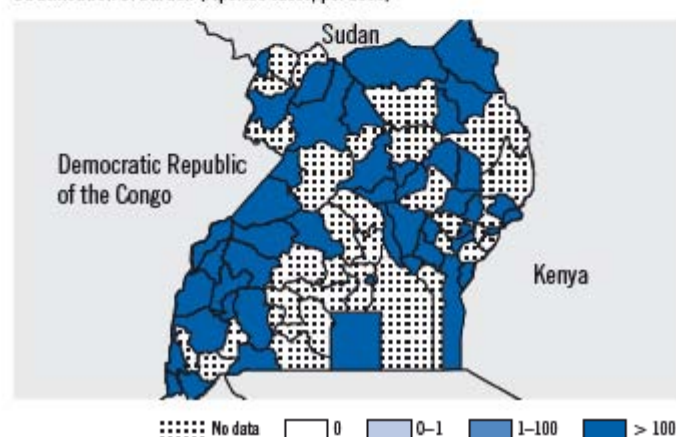
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	28 491	90
Low transmission (0–1/1000)	3 166	10
Malaria-free (0 cases)	0	0
Rural population	27 555	87

Vector and parasite profiles

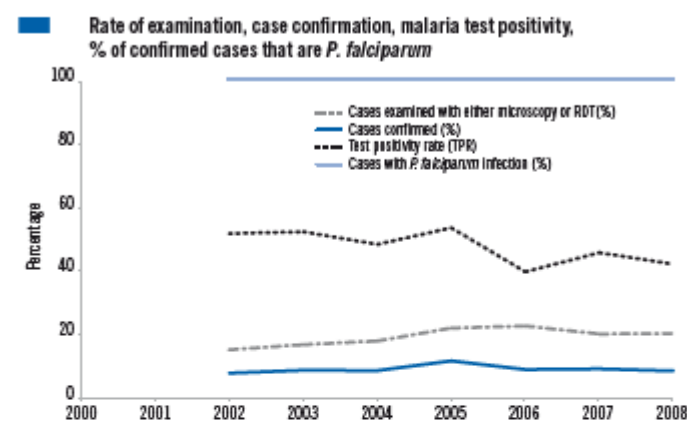
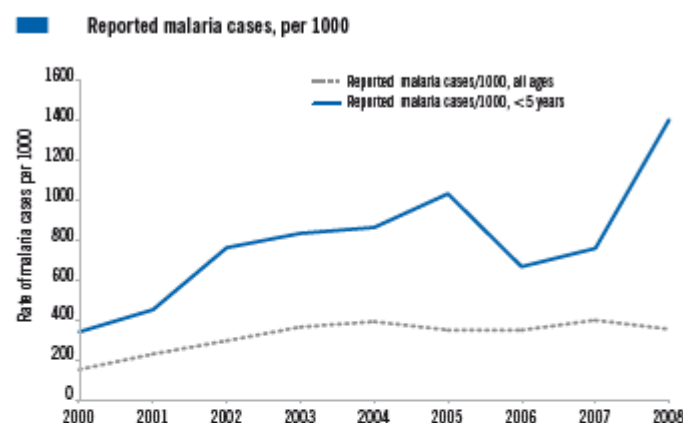
Major <i>Anopheles</i> species	<i>gambiae</i> , <i>arabiensis</i> , <i>funestus</i> , <i>brochieri</i> , <i>bwambae</i> , <i>coustani</i> , <i>hancocki</i> , <i>hargreavesi</i> , <i>nili</i> , <i>paludis</i> , <i>pharoensis</i> , <i>quadriannulatus</i>
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<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>
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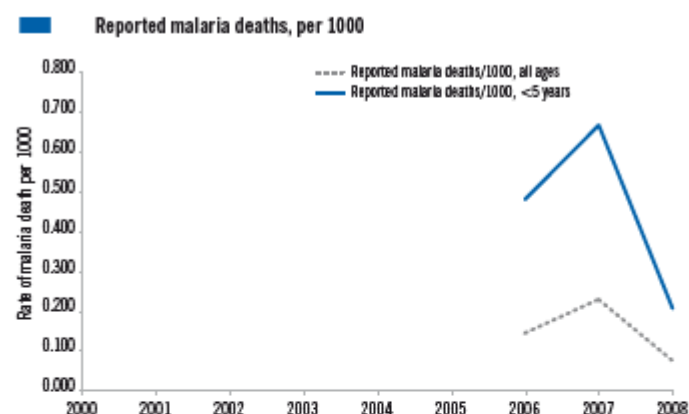
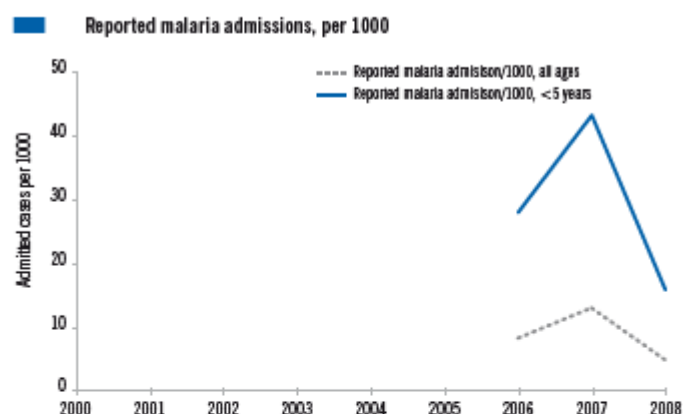
Stratification of burden (reported cases, per 1000)



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	3 552 859	1 628 314	10 502 146	4 266 494					
2001	5 624 032	2 233 435	14 525 591	5 384 241					
2002	7 536 748	3 900 000	15 741 520	5 949 360	1 100 374	557 159	546 016		
2003	9 657 332	4 400 000	20 070 390	7 103 940	1 566 474	801 784	785 748		
2004	10 717 076	4 700 000	22 510 595	7 705 537	1 859 780	879 032	861 451		
2005	9 867 174	5 800 000	23 774 349	8 047 500	2 107 011	1 104 310	1 082 224		
2006	10 168 389	3 857 916	25 250 159	9 645 597	2 238 155	867 398	850 050	62	61
2007	12 038 438	4 528 442	30 187 184	13 935 080	2 350 100	1 050 240	1 029 235	77	63
2008	11 029 571	8 656 327	29 237 275	15 071 475	2 173 072	894 505	876 615	29	67



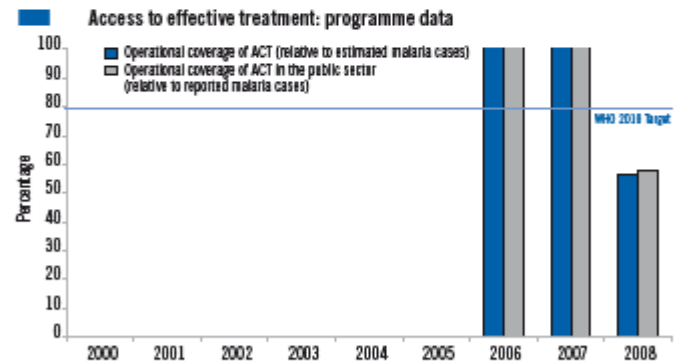
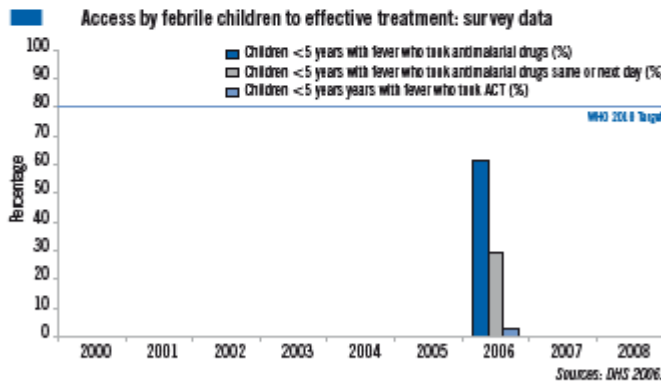
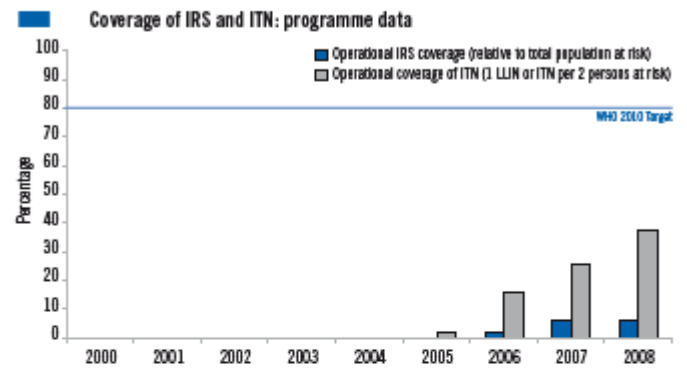
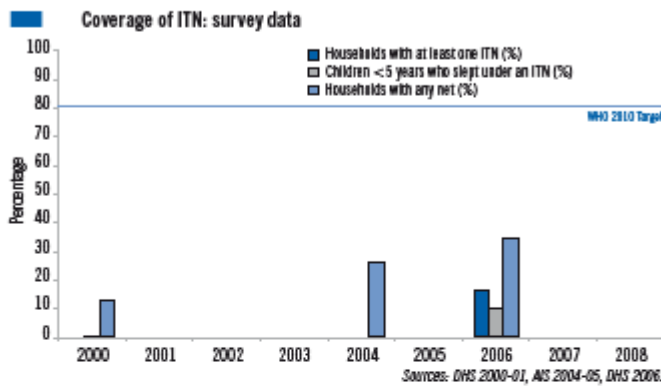
Year	Reported malaria admissions, all ages	Reported malaria admissions, < 5 years	All-cause admissions, all ages	All-cause admissions, < 5 years	Reported malaria deaths, all ages	Reported malaria deaths, < 5 years	All-cause deaths, all ages	All-cause deaths, < 5 years	Reporting completeness of inpatient health facilities (%)	Reporting completeness of districts (%)
2000										
2001										
2002										
2003										
2004										
2005										
2006	245 896	163 041	589 194	317 807	4 252	2 795	13 179	6 762		
2007	399 512	259 679	1 011 407	510 005	7 003	4 002	27 260	11 546		
2008	154 423	98 384	422 078	204 958	2 372	1 279	10 293	4 286		

II. INTERVENTION POLICIES AND STRATEGIES

Intervention	WHO-RECOMMENDED 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	2004
	Targeting all age groups	Yes	2008	Distribution – EPI routine and campaign	Yes	2004
				Targeting children < 5 years and pregnant women	Yes	2003
				ITN distribution is subsidized	Yes	2004
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	Yes	2006	Insecticide-resistance management implemented	Yes	2007
	DDT is used for IRS (public health) only	Yes	2008	Where IRS is conducted, other options are also implemented, e.g. ITN	Yes	2006
				IRS is used for prevention and control of epidemics	Yes	2001
Intermittent preventive treatment (IPT)	IPT used to prevent malaria during pregnancy	Yes	2000			
Case management	Oral artemisinin monotherapies banned (prohibited from registration or removed from the system)	Yes	2007	Parasitological confirmation for patients ≥ 5 years only	No	–
	Parasitological confirmation for patients of all ages	Yes	1997	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)	Yes	2006
	Pre-referral treatment with quinine or artemether IM or artesunate suppositories	Yes	2002	Uncomplicated malaria cases are admitted	No	–
	Oversight regulation of case management in the private sectors	No	–			
	RDTs used at community level	No	–			

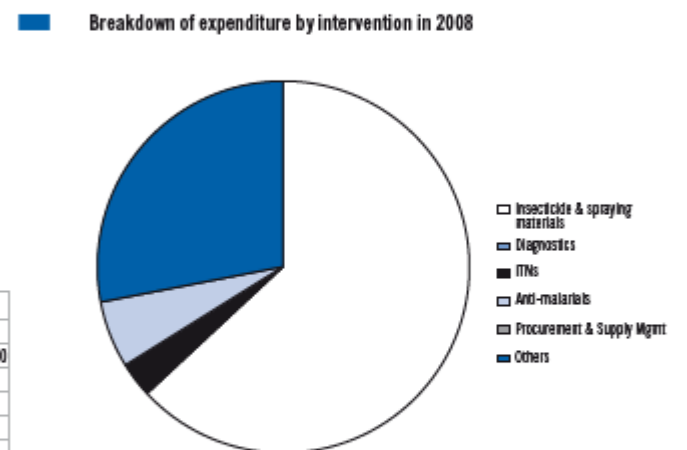
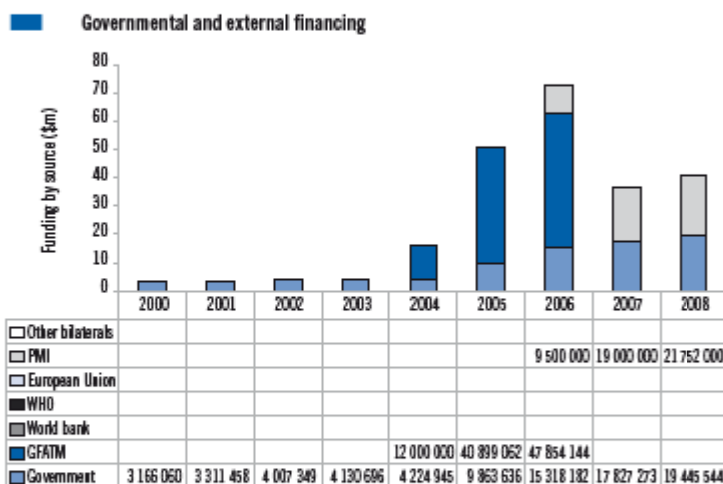
Antimalarial policy	Type of medicine	Year adopted	Study year	Results of therapeutic efficacy tests				
				No. of studies	Median	Minimum	Maximum	Percentiles: 25% 75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AL	2004						
First-line treatment of <i>P. falciparum</i> (confirmed)	AL	2004						
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



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		1	-	-					
2001									
2002									
2003									
2004			-	-					
2005							319 000		
2006	24	10	-	-	103 329	470 000	1 999 449		14 570 670
2007					466 477	1 963 945	1 622 001		16 919 100
2008					499 998	1 858 149	2 273 413		6 389 600

IV. FINANCING MALARIA CONTROL



V. SOURCE OF INFORMATION

PROGRAMME DATA	SURVEY AND OTHER DATA
Reported cases	Surveillance data
Operational coverage of ITNs, IRS and access to medicines	Insecticide-treated nets (ITN)
Financial data	Treatment
	Use of health services
	DHS 2000-01, AIS 2004-05, DHS 2006
	DHS 2006
	DHS 2006

UNITED REPUBLIC OF TANZANIA

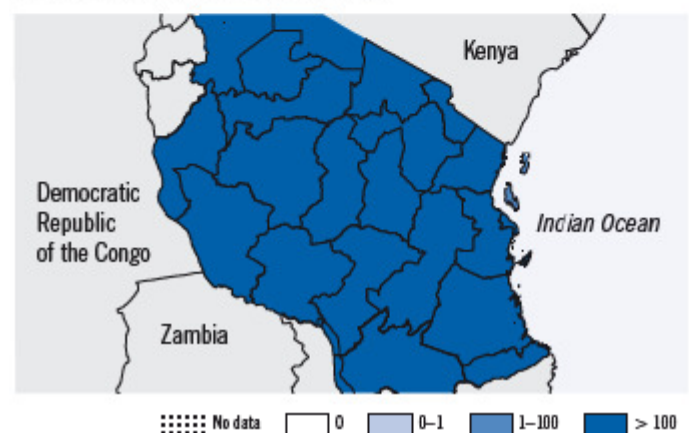
The United Republic of Tanzania had an estimated 11 million malaria cases in 2006. Transmission occurs all year round, with seasonal peaks. Most cases are caused by *P. falciparum*, but only a fraction are parasitologically tested. Between 2003 and 2008, 11 million cases and 17 thousand deaths were reported annually. While the nationwide trends are unclear due to limited data from the mainland, the numbers of confirmed malaria cases, inpatient cases and deaths have been significantly reduced in Zanzibar subsequent to the scale-up of LLINs, IRS and ACT. The island delivered 500 000 LLINs during 2006–2008, enough to cover the entire population at risk, implemented IRS covering 213 000 households and protecting the entire 1.1 million population in several rounds, and delivered ACT in all facilities. The data available from the mainland do not show a similar impact. On the mainland, 1.3 million LLINs were distributed during 2006–2008 and 1.8 million conventional ITNs in 2008, adequate to protect less than 10% of the population at risk. IRS was conducted in 2008, covering 100 000 households and protecting 190 000 people at risk. The national malaria control programme delivered 23 million ACT treatment courses in 2007, sufficient to treat all reported cases in the public sector. No information on funding after 2003 was provided by the programme, but it is known that expenditure on malaria control has increased markedly with Global Fund grants providing over US\$ 327 million in rounds 1, 4, 7 and 8 and over US\$ 20 million annually from the United States President's Malaria Initiative.

I. EPIDEMIOLOGICAL PROFILE

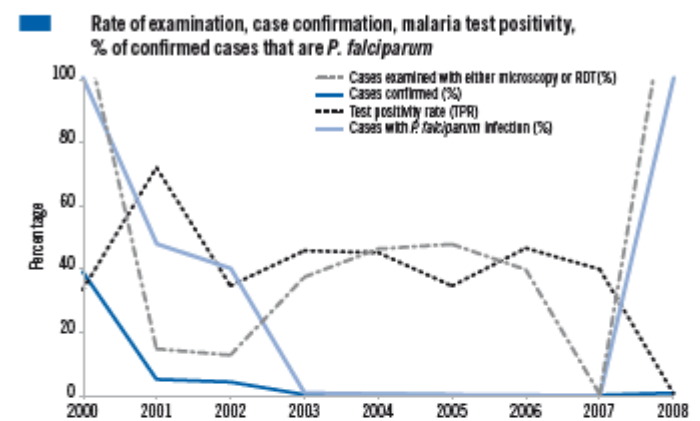
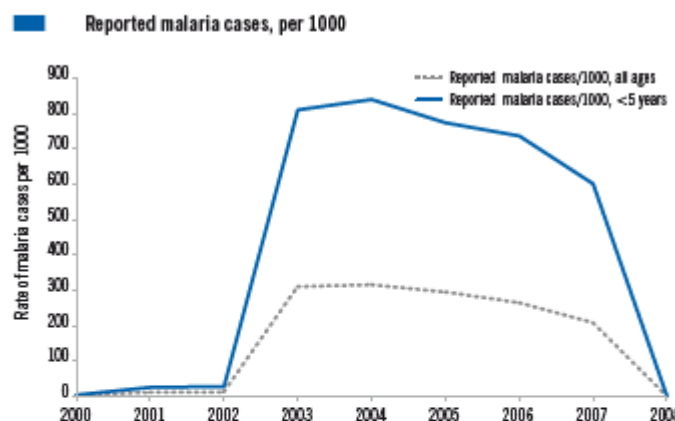
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	42 484	
< 5 years	7 566	18
≥ 5 years	34 918	82
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	30 932	73
Low transmission (0–1/1000)	11 552	27
Malaria-free (0 cases)	0	0
Rural population	31 662	75
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>gambiae</i> , <i>arabiensis</i> , <i>funestus</i> , <i>coustani</i> , <i>merus</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)

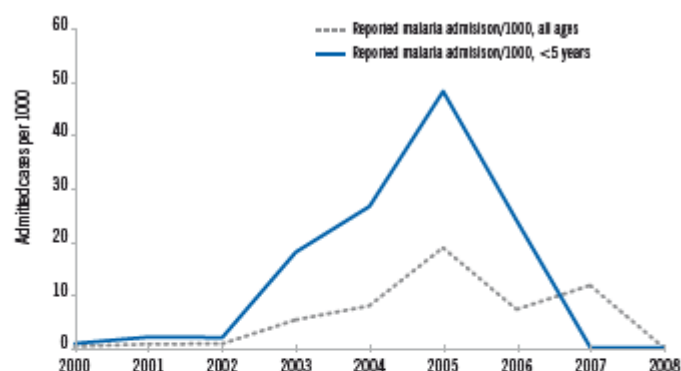
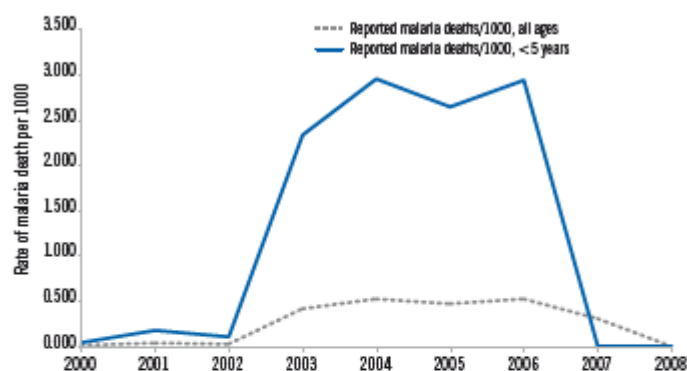


Trends in malaria morbidity and mortality



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	45 643	23 350	116 932	54 921	53 533	17 734	17 734		100
2001	369 474	155 189	661 450	317 713	53 804	18 385	18 385		100
2002	413 361	174 899	755 873	368 256	51 968	16 983	16 983		100
2003	11 418 731	5 244 254	28 165 762	12 139 594	4 243 853	15 751	15 705		100
2004	11 930 393	5 605 674	29 595 179	13 093 731	5 489 733	11 981	11 936		100
2005	11 466 713	5 332 548	26 985 965	11 390 100	5 443 908	7 677	7 628		100
2006	10 582 608	5 237 555	24 297 806	11 799 502	4 181 569	1 633	1 585		100
2007	8 571 839	4 410 779	19 109 304	10 055 945	23 511*	293*	293*		100
2008	9 611*	4 689*	110 542*	41 411*	13 183*	67*	67*		100

* Data belongs to Zanzibar only

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	9 806	5 407	23 525	10 552	379	252	736	490		
2001	26 029	12 956	70 623	25 944	1 228	1 087	3 241	1 559		
2002	28 062	12 805	70 736	26 296	815	673	2 559	1 249		
2003	195 930	117 174	1 467 822	732 878	15 251	15 121	45 893	21 939		
2004	300 985	178 491	2 242 559	1 204 794	19 859	19 734	60 831	31 245		
2005	737 343	333 465	2 855 465	1 225 897	18 322	18 238	71 687	30 781		
2006	291 913	170 637	2 584 264	1 225 388	20 962	20 913	56 184	21 454		
2007	486 847	1 128*	1 005 042	6 501*	12 593	36*	35 476	187*		
2008	1 878*	861*	19 402*	5 250*	29*	23*	379*	186*		

* Data belongs to Zanzibar only

II. INTERVENTION POLICIES AND STRATEGIES

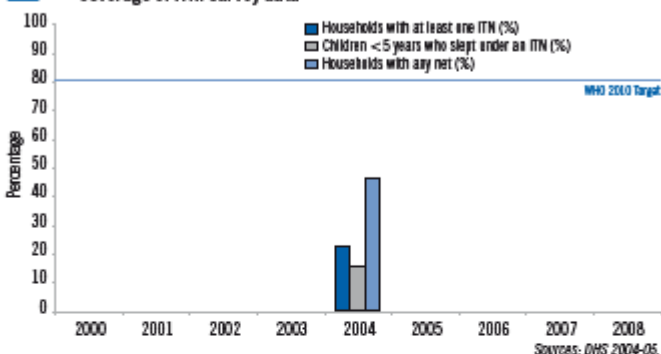
Intervention	WHO-RECOMMENDED POLICIES / STRATEGIES	WHO-RECOMMENDED POLICIES / STRATEGIES		OPTIONAL POLICIES / STRATEGIES	OPTIONAL POLICIES / STRATEGIES	
		Yes or No	Year adopted		Yes or No	Year adopted
Insecticide-treated nets (ITN)	Distribution of ITN/LLINs – Free	–	–	Distribution – Antenatal care	Yes	2004
	Targeting all age groups	No	–	Distribution – EPI routine and campaign	Yes	2005
				Targeting children < 5 years and pregnant women	Yes	2004
				ITN distribution is subsidized	–	–
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	2007
				IRS is used for prevention and control of epidemics	Yes	2007
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)	No	–	Parasitological confirmation for patients ≥ 5 years only	–	–
	Parasitological confirmation for patients of all ages	No	–	Malaria diagnosis is free of charge in the public sector	–	–
	ACT is free of charge for < 5 years old in the public sector	Yes	1998	ACT is free of charge for patients ≥ 5 years in the public sector	–	–
	Diagnosis of malaria of inpatients is based on parasitological confirmation	–	–	ACT is delivered at community level through community agents (beyond the health facilities)	–	–
	Pre-referral treatment with quinine or artemether IM or artesunate suppositories	Yes	2001	Uncomplicated malaria cases are admitted	–	–
	Oversight regulation of case management in the private sectors	–	–			
	RDTs used at community level	–	–			

Results of therapeutic efficacy tests

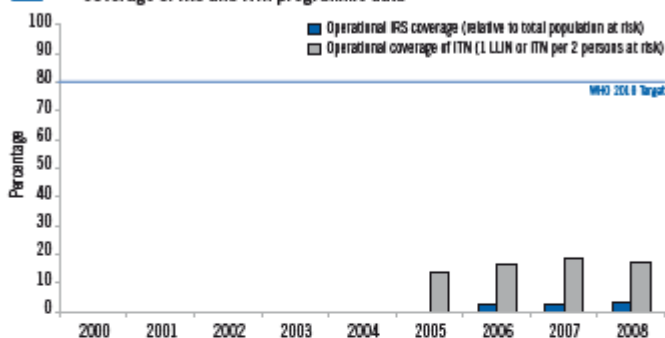
Antimalarial policy	Type of medicine	Year adopted	Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AS+AQ, AL	2004	2002–2005	2	12.1	10.8	13.4	10.8	13.4
First-line treatment of <i>P. falciparum</i> (confirmed)	AS+AQ, AL	2004	2002–2007	3	0	0	2.7	0	2.7
Treatment failure of <i>P. falciparum</i>	AL, QN(7d)	2004							
Treatment of severe malaria	QN(7d)	2004							
Treatment of <i>P. vivax</i>	–	–							

III. IMPLEMENTING MALARIA CONTROL

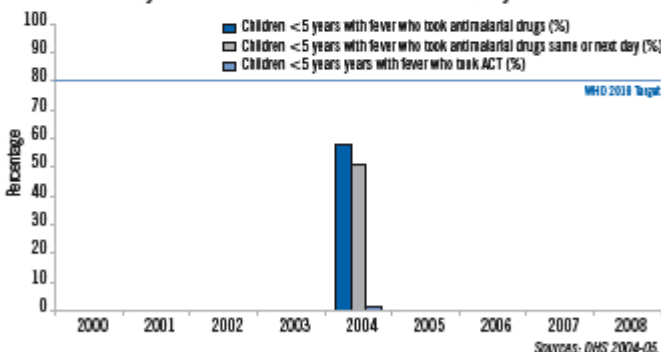
Coverage of ITN: survey data



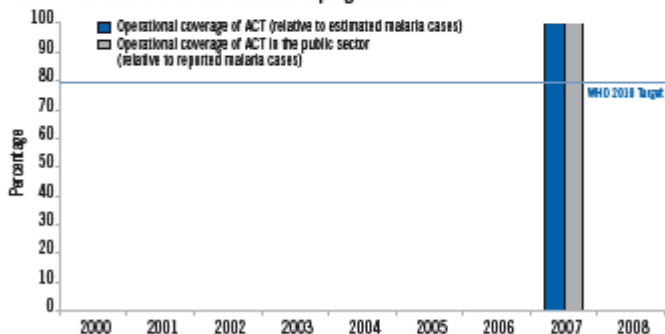
Coverage of IRS and ITN: programme data



Access by febrile children to effective treatment: survey data



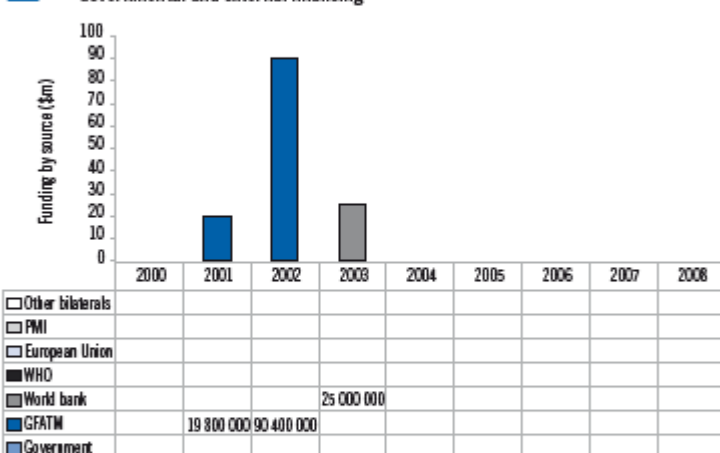
Access to effective treatment: programme data



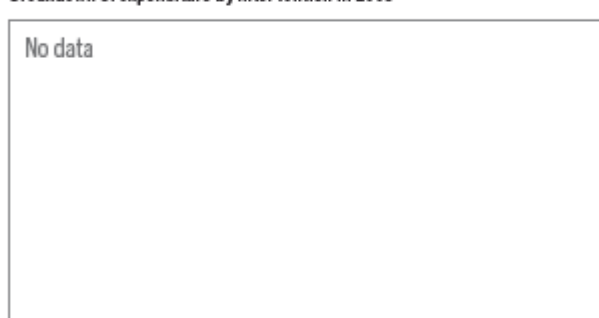
Year	Pregnant women who slept under any net (%)	Pregnant women who slept under an ITN (%)	Children < 5 years with fever (%)	Febrile children < 5 years who sought treatment in HF (%)	Number of households protected by IRS	Number of people protected by IRS	Number of ITNs and/or LLINs	Number of 1st-line treatment courses received	Number of ACT treatment courses received
2000									
2001									
2002							467 668	28 726	
2003							1 466 181	220 725	
2004		16	-	-			1 792 147	476 712	
2005							2 634 414	363 585	
2006					205 699	1 071 361	3 119 013	227 047	
2007					405 878	1 071 194	2 990 668	23 455 260	23 455 260
2008					295 385	1 308 194	2 271 330		

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	Insecticide-treated nets (ITN)	DHS 1999, DHS 2004-05
Operational coverage of ITNs, IRS and access to medicines	Programme report	Treatment	DHS 1999, DHS 2004-05
Financial data	Programme report	Use of health services	DHS 2004

SURVEY AND OTHER DATA

ZAMBIA

Malaria transmission is seasonal, occurring mainly from November to May. Most cases are due to *P. falciparum*, but little confirmation was done in the past. Surveillance data for 2008 showed decreases from the average for 2001–2003 (before interventions) of 55% in the number of inpatient malaria cases and 79% in the number of deaths in children under 5. The decreases for persons of all ages were 52% for inpatient malaria cases, 59% for inpatient deaths and 19% for outpatient cases. The decrease should be interpreted cautiously, however, because data for the third and fourth quarters of 2008 may be incomplete, as the country changed to a new health information system in mid-2008. An analysis by the Ministry of Health and WHO of data for the first and second quarters of each year showed significant decreases in the numbers of inpatient malaria cases and deaths at all ages of 55% and 60%, respectively, in 2008 from the averages for the first and second quarters of 2000–2002. Thus, the apparent impact is likely to be associated with the recent scale-up of interventions. The national malaria control programme delivered nearly 4.8 million LLINs during 2006–2008 (of which 2.1 million were delivered during the 2007 mass campaign), adequate to cover 80% of the population at risk. IRS has recently been expanded, covering 1 149 599 households and protecting 5.7 million (48%) people at risk in 2008. In the 2008 malaria indicator survey, 62% of households owned an ITN and 41% children under 5 slept under one, but only 13% of febrile children received ACT treatment. Funding for malaria has increased significantly, from less than US\$ 5 million in 2002 to over US\$ 17 million in 2008. The Government's expenditure on malaria is increasing, but major funding also comes from the Global Fund, the United States President's Malaria Initiative, the World Bank, United Nations agencies and nongovernmental organizations.

I. EPIDEMIOLOGICAL PROFILE

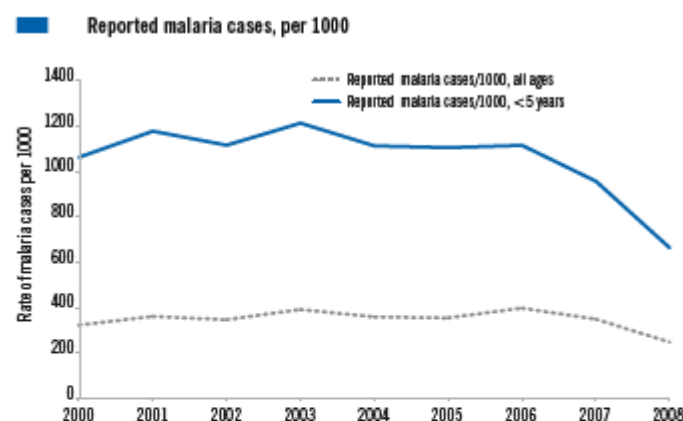
Population, endemicity and malaria burden

Population (in thousands)	2008	%
All age groups	12 620	
< 5 years	2 282	18
≥ 5 years	10 338	82
Population by malaria endemicity (in thousands)		
High transmission ≥ 1/1000	12 620	100
Low transmission (0–1/1000)	0	0
Malaria-free (0 cases)	0	0
Rural population	8 159	65
Vector and parasite profiles		
Major <i>Anopheles</i> species	<i>gambiae</i> , <i>arabiensis</i> , <i>funestus</i> , <i>nili</i> , <i>pharoensis</i> , <i>quadriannulatus</i>	
<i>Plasmodium</i> species	<i>falciparum</i> , <i>vivax</i>	

Stratification of burden (reported cases, per 1000)



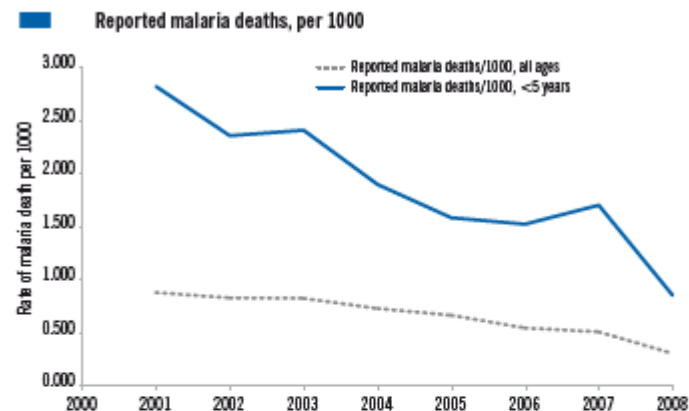
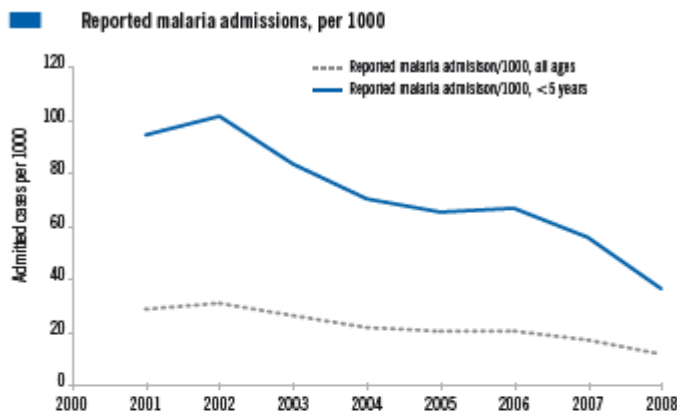
Trends in malaria morbidity and mortality



Rate of examination, case confirmation, malaria test positivity, % of confirmed cases that are *P. falciparum*



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	3 337 796	2 016 333	9 230 639	4 856 786					
2001	3 838 402	2 295 738	10 133 545	5 334 699					
2002	3 760 335	2 230 107	10 347 966	5 299 233					
2003	4 346 172	2 480 157	11 970 827	5 972 557					
2004	4 078 234	2 324 580	11 252 589	5 534 795					
2005	4 121 356	2 360 307	11 567 755	5 680 460					
2006	4 731 338	2 434 135	13 283 617	5 872 543					
2007	4 248 295	2 133 915	13 277 766	5 559 399					
2008	3 080 301	1 508 448	11 565 345	4 675 281					



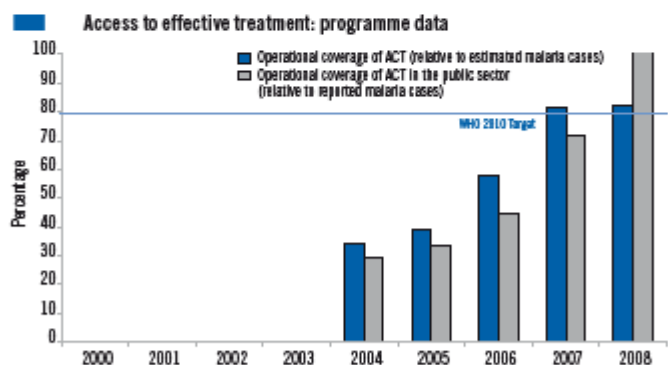
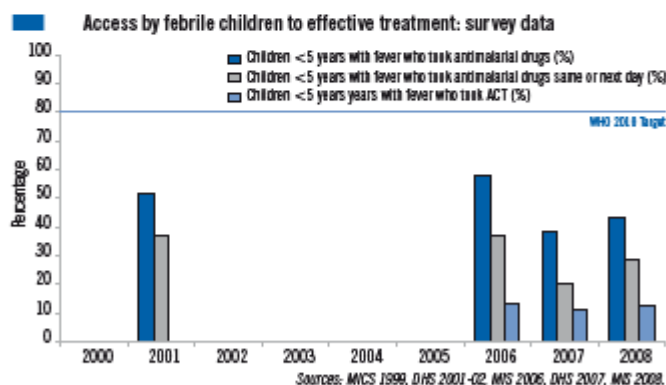
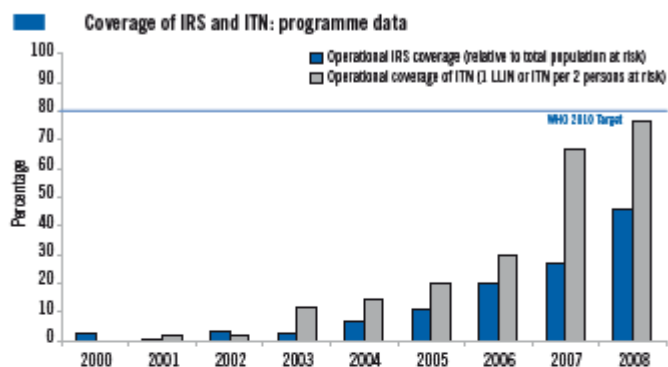
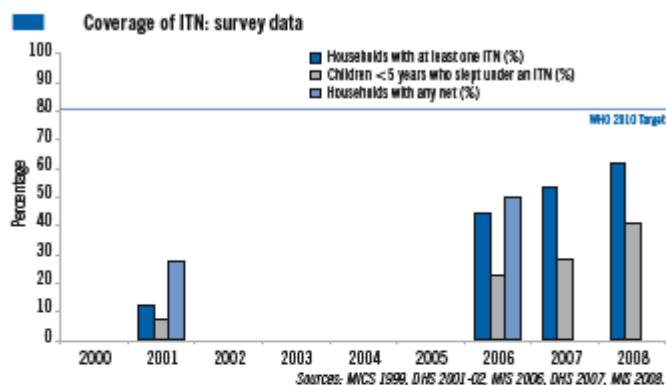
Year	Reported malaria admissions, all ages	Reported malaria admissions, < 5 years	All-cause admissions, all ages	All-cause admissions, < 5 years	Reported malaria deaths, all ages	Reported malaria deaths, < 5 years	All-cause deaths, all ages	All-cause deaths, < 5 years	Reporting completeness of inpatient health facilities (%)	Reporting completeness of districts (%)
2000										
2001	308 662	184 917	757 255	379 811	9 369	5 513	35 358	16 680		
2002	340 834	203 625	893 262	424 748	9 021	4 718	39 482	16 377		
2003	296 602	171 408	766 078	348 864	9 178	4 935	39 117	15 459		
2004	251 434	147 663	685 130	289 082	8 289	3 972	38 466	13 569		
2005	240 952	140 329	722 712	300 804	7 737	3 388	38 740	12 796		
2006	247 120	146 524	718 149	307 443	6 484	3 330	35 541	12 469		
2007	212 049	125 188	666 705	280 266	6 183	3 801	34 275	13 842		
2008	149 964	83 530	691 228	361 268	3 781	1 941	27 954	10 280		

II. INTERVENTION POLICIES AND STRATEGIES

Intervention	WHO-RECOMMENDED 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	2005	Distribution – Antenatal care	Yes	2001
	Targeting all age groups	Yes	1998	Distribution – EPI routine and campaign	Yes	2003
				Targeting children < 5 years and pregnant women	Yes	2000
				ITN distribution is subsidized	Yes	2001
Indoor residual spraying (IRS)	IRS is a primary vector control intervention	Yes	2000	Insecticide-resistance management implemented	Yes	2000
	DDT is used for IRS (public health) only	Yes	2001	Where IRS is conducted, other options are also implemented, e.g. ITN	Yes	2001
				IRS is used for prevention and control of epidemics	Yes	2001
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	2003	Parasitological confirmation for patients ≥ 5 years only	Yes	2001
	Parasitological confirmation for patients of all ages	Yes	2001	Malaria diagnosis is free of charge in the public sector	Yes	2000
	ACT is free of charge for < 5 years old in the public sector	Yes	2003	ACT is free of charge for patients ≥ 5 years in the public sector	Yes	2003
	Diagnosis of malaria of inpatients is based on parasitological confirmation	Yes	2003	ACT is delivered at community level through community agents (beyond the health facilities)	Yes	2007
	Pre-referral treatment with quinine or artemether IM or artesunate suppositories	Yes	1998	Uncomplicated malaria cases are admitted	Yes	2000
	Oversight regulation of case management in the private sectors	No	–			
	RDTs used at community level	Yes	2007			

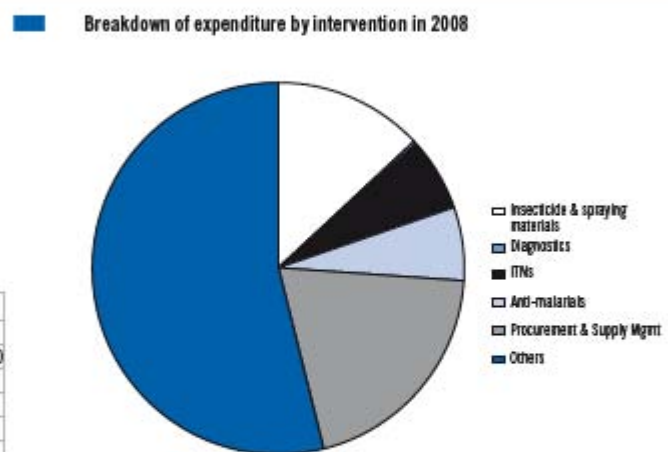
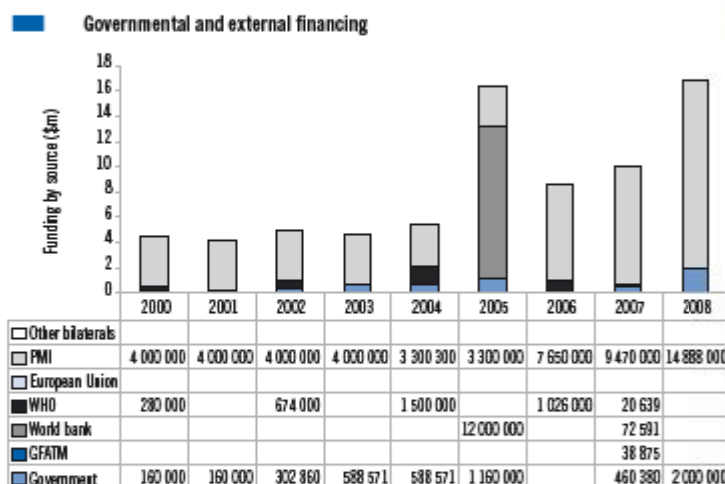
Antimalarial policy	Type of medicine	Year adopted	Study year	Results of therapeutic efficacy tests					
				No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AL	2002	2004–2005	10	0	0	0	0	0
First-line treatment of <i>P. falciparum</i> (confirmed)	AL	2002							
Treatment failure of <i>P. falciparum</i>	QN(7d)	2002							
Treatment of severe malaria	QN(7d)	2002							
Treatment of <i>P. vivax</i>	–	–							

III. IMPLEMENTING MALARIA CONTROL



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						279 321			
2001	17	9	-	-		37 890	115 891		
2002						391 926	112 020		
2003						324 137	557 071		
2004						772 644	176 082	1 184 698	1 184 698
2005						1 251 701	516 999	1 379 955	1 379 955
2006		24	-	-		2 408 080	1 162 578	2 111 348	2 111 348
2007			-	-		3 288 475	2 458 183	3 036 982	3 036 982
2008			-	-		5 747 995	1 188 443	3 142 405	3 142 405

IV. FINANCING MALARIA CONTROL



V. SOURCE OF INFORMATION

PROGRAMME DATA	SURVEY AND OTHER DATA
Reported cases	Surveillance data
Operational coverage of ITNs, IRS and access to medicines	Programme report
Financial data	Programme report
	Insecticide-treated nets (ITN)
	Treatment
	Use of health services

Sources: MICS 1999, DHS 2001-02, MIS 2006, DHS 2007, MIS 2008.

