

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

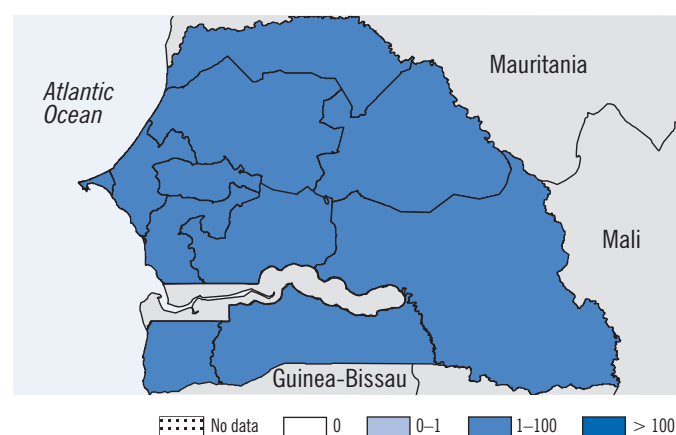
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	11 703	96
Low transmission (0–1/1000)	509	4
Malaria-free (0 cases)	0	0
Rural population	7 046	58

Vector and parasite profiles

Major *Anopheles* species: *gambiae*, *arabiensis*, *funestus*, *brochieri*, *coustani*, *flavicosta*, *hancocki*, *melas*, *nili*, *pharoensis*

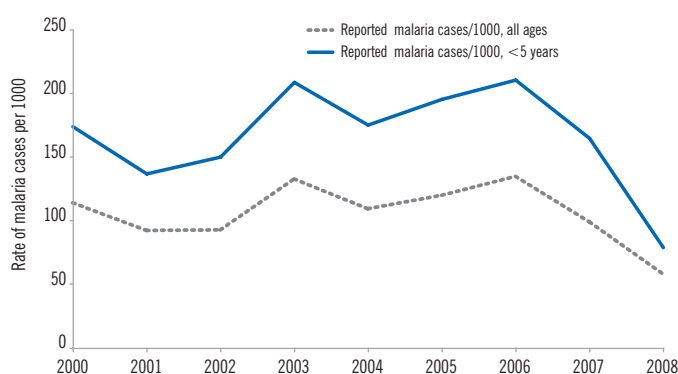
Plasmodium species: *falciparum*, *vivax*

Stratification of burden (reported cases, per 1000)

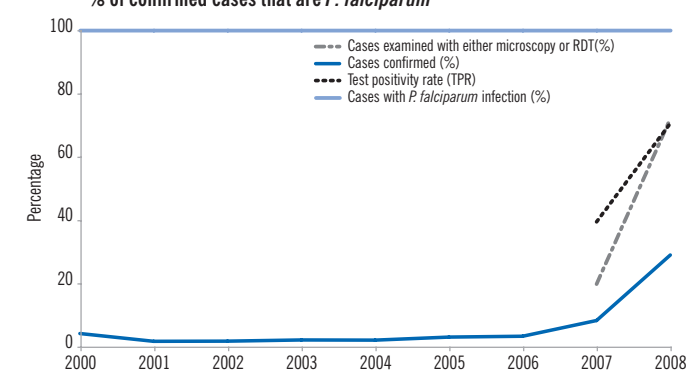


Trends in malaria morbidity and mortality

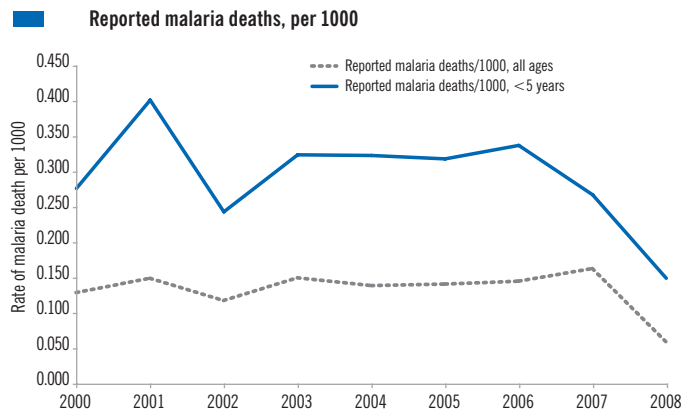
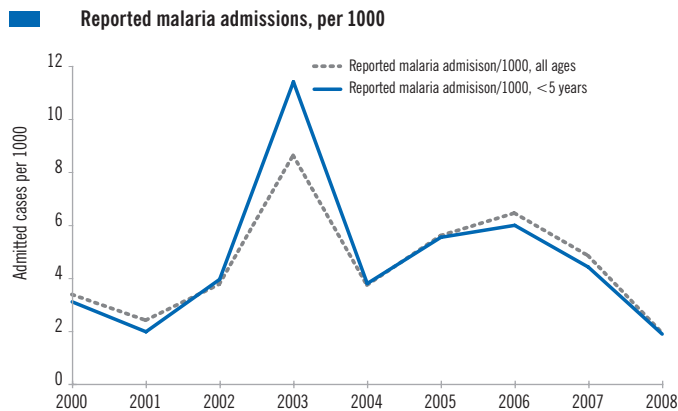
Reported malaria cases, per 1000



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		

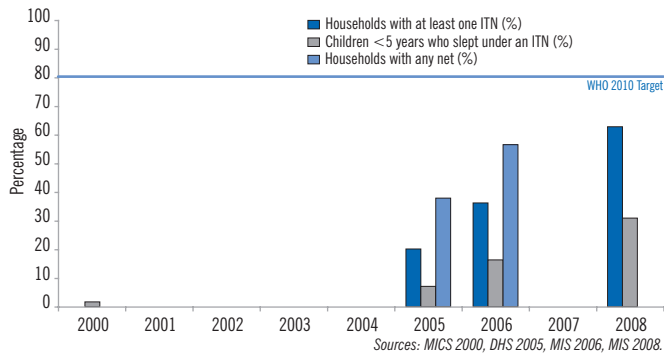
II. INTERVENTION POLICIES AND STRATEGIES

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			

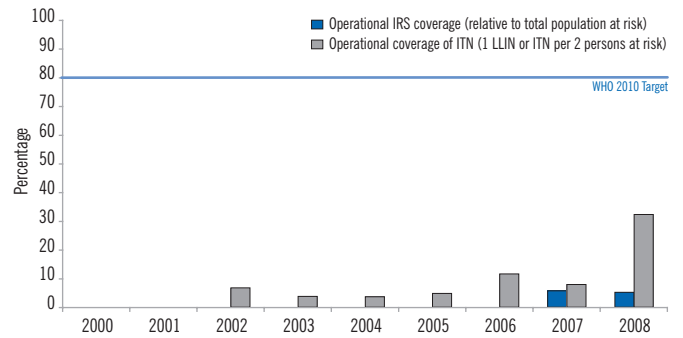
Results of therapeutic efficacy tests									
Antimalarial policy	Type of medicine	Year adopted	Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25% 75%	
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AS + AQ	2005							
First-line treatment of <i>P. falciparum</i> (confirmed)	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

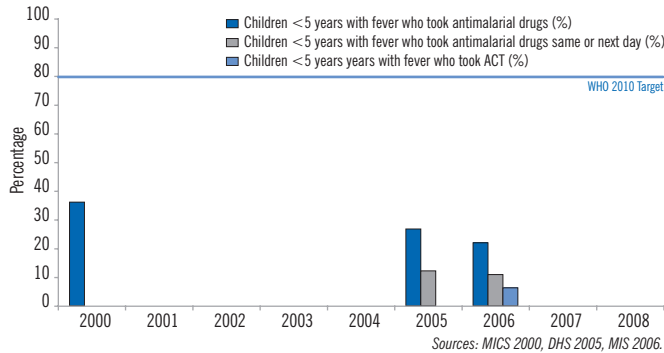
Coverage of ITN: survey data



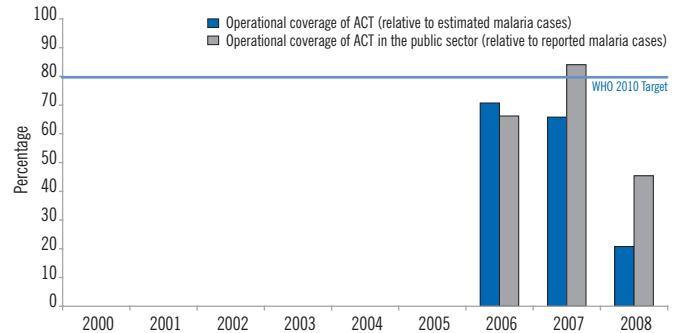
Coverage of IRS and ITN: programme data



Access by febrile children to effective treatment: survey data



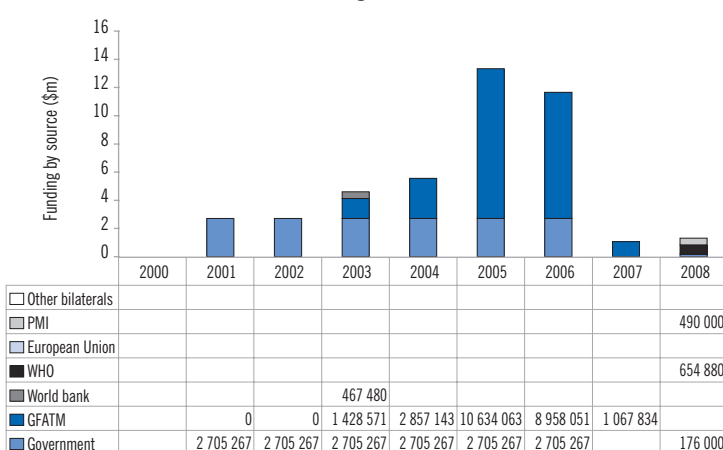
Access to effective treatment: programme data



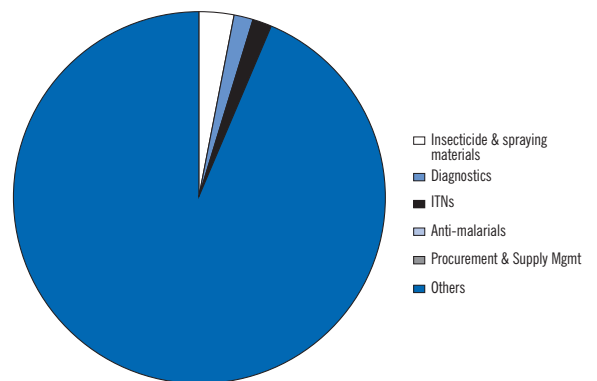
Year	Pregnant women who slept under any net (%)	Pregnant women who slept under an ITN (%)	Children < 5 years with fever (%)	Febrile children < 5 years who sought treatment in HF (%)	Number of households protected by IRS	Number of people protected by IRS	Number of ITNs and/or LLINs	Number of 1st-line treatment courses received	Number of ACT treatment courses received
2000			-	-					
2001								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

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 2005, MIS 2006, MIS 2008
Treatment	MICS 2000, DHS 2005, MIS 2006
Use of health services	DHS 2005