

PAKISTAN

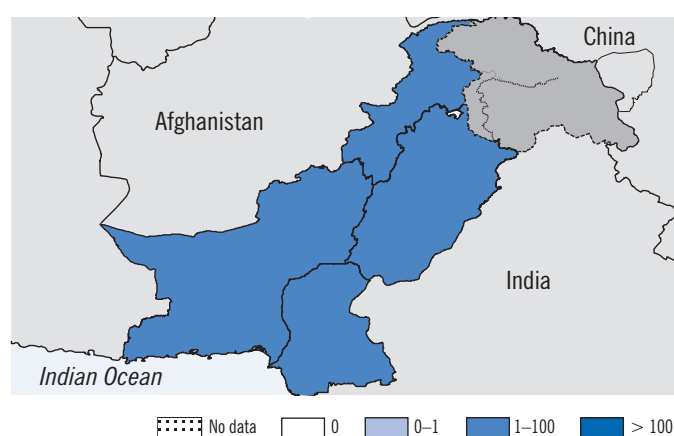
A total of 4.5 million suspected malaria cases were reported in 2008, comprising 6% of all outpatient attendances and 18% of admissions; only 59 284 confirmed cases were reported in 2008, 40% of which originated in Balochistan province. About 30% of the confirmed cases are due to *P. falciparum*. IRS 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

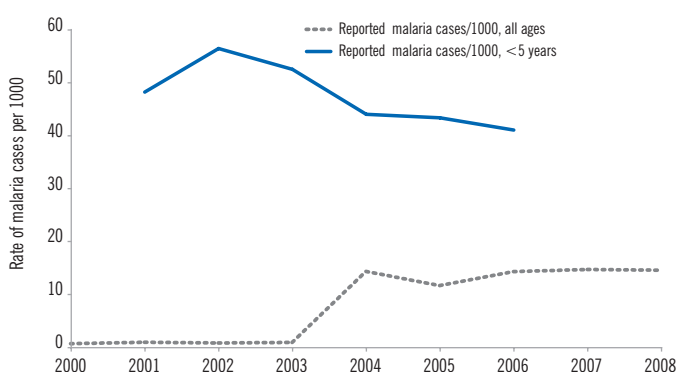
Population (in thousands)	2008	%
All age groups	176 952	
< 5 years	23 778	13
≥ 5 years	153 174	87
Population by malaria endemicity (in thousands)	2008	%
High transmission ≥ 1/1000	26 173	15
Low transmission (0–1/1000)	143 129	81
Malaria-free (0 cases)	7 649	4
Rural population	113 048	64
Vector and parasite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

Stratification of burden (reported cases, per 1000)

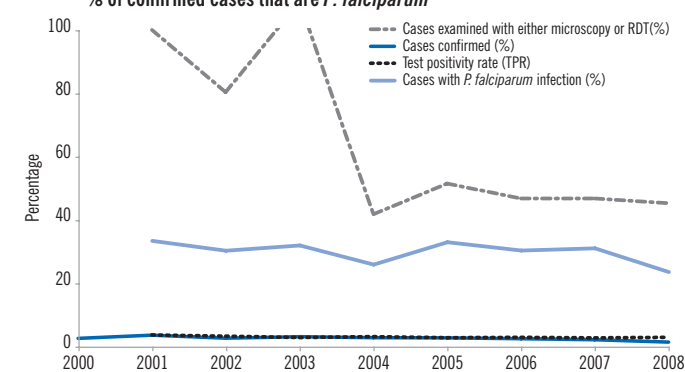


Trends in malaria morbidity and mortality

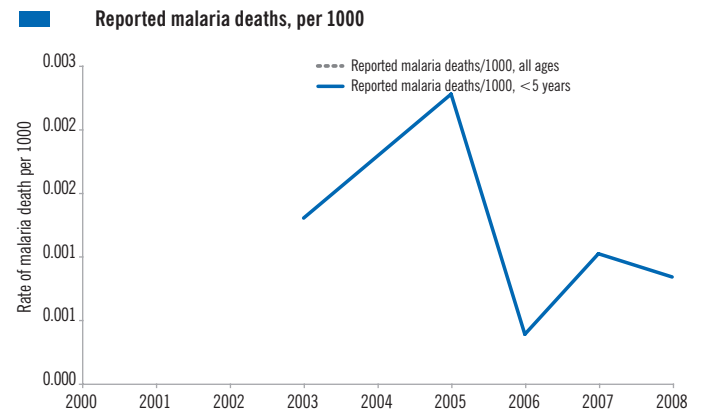
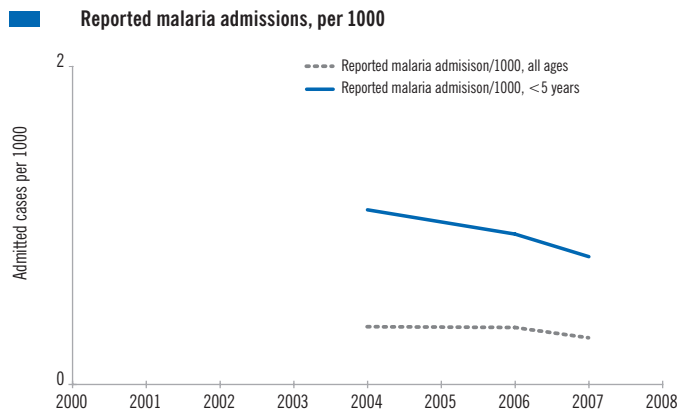
Reported malaria cases, per 1000



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	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				

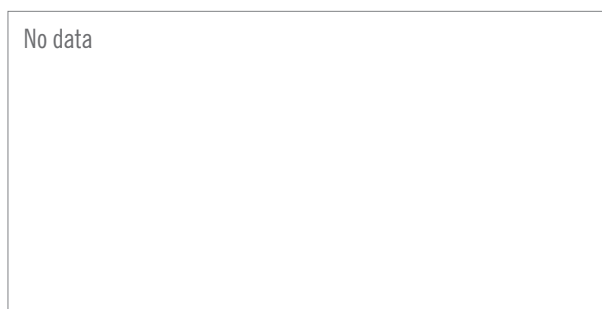
II. INTERVENTION POLICIES AND STRATEGIES

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	–			

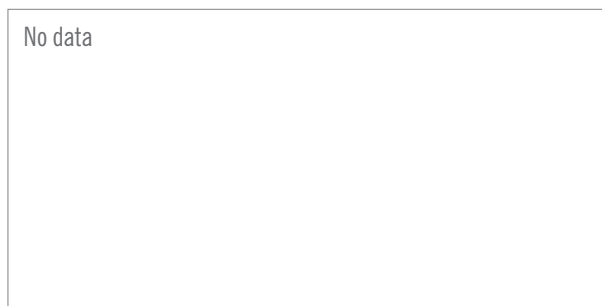
Results of therapeutic efficacy tests									
Antimalarial policy	Type of medicine	Year adopted	Study year	No. of studies	Median	Minimum	Maximum	Percentiles: 25%	75%
First-line treatment of <i>P. falciparum</i> (unconfirmed)	AS + SP	–							
First-line treatment of <i>P. falciparum</i> (confirmed)	AS + SP	–							
Treatment failure of <i>P. falciparum</i>	QN	–							
Treatment of severe malaria	AM, QN	–							
Treatment of <i>P. vivax</i>	CQ + PQ(5d)	–							

III. IMPLEMENTING MALARIA CONTROL

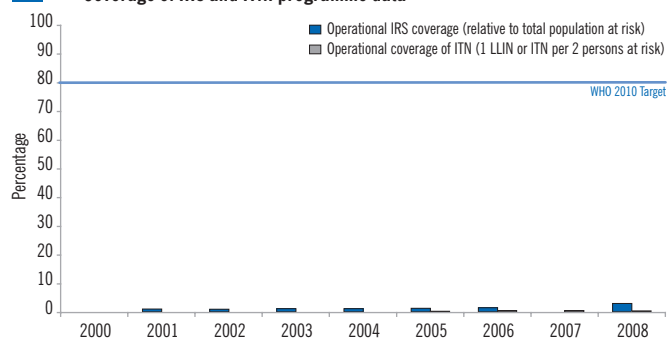
Coverage of ITN: survey data



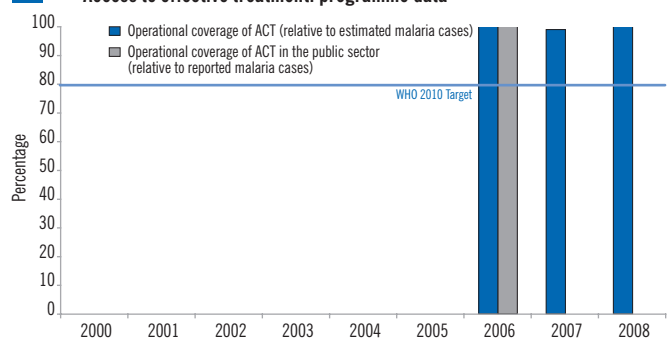
Access by febrile children to effective treatment: survey data



Coverage of IRS and ITN: programme data



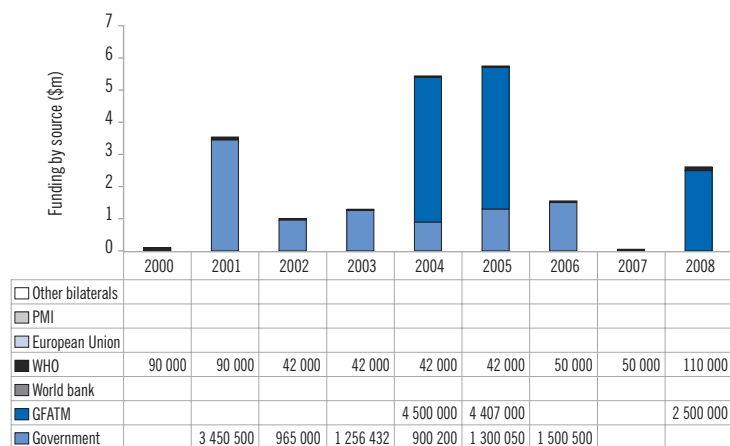
Access to effective treatment: programme data



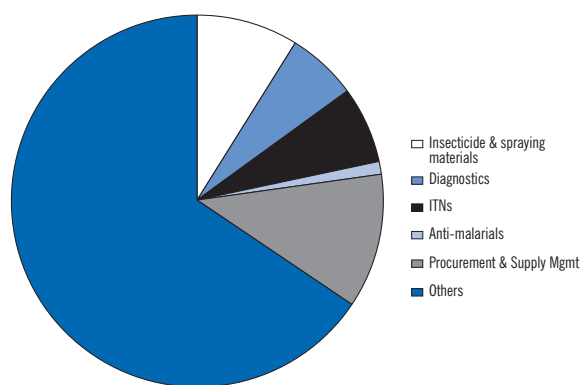
Year	Pregnant women who slept under any net (%)	Pregnant women who slept under an ITN (%)	Children < 5 years with fever (%)	Febrile children < 5 years who sought treatment in HF (%)	Number of households protected by IRS	Number of people protected by IRS	Number of ITNs and/or LLINs	Number of 1st-line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