

Malaria in the Eastern Mediterranean Region 2013



**World Health
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Regional Office for the Eastern Mediterranean

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Contents

1. Introduction.....	5
2. Regional malaria situation	5
2.1 Regional overview	5
2.2 Regional burden	6
2.3 Coverage of key anti-malaria interventions	7
3. Malaria country profiles	9
Annex 1. Regional summary profile.....	11
Annex 2. Country profiles	15
Annex 3. Abbreviations	71

1. Introduction

This report summarizes the malaria situation in the WHO Eastern Mediterranean Region by end 2012. It provides a summary of the regional burden and the key interventions in the seven countries in the Region with a high burden of malaria. The report expands on the annual World malaria report, providing comprehensive country profiles for all countries, including those that are malaria-free and those targeting elimination, as well as the high-burden countries.

In 1999, the Roll Back Malaria initiative was launched in the Eastern Mediterranean Region. All countries in the Region committed themselves to the objectives of the initiative and updated their national strategies for malaria control and elimination accordingly. By 2012, the objectives of the regional strategy had been reached in some countries of the Region. The United Arab Emirates and Morocco were certified as malaria-free, Syrian Arab Republic and Iraq were reporting no local transmission and Oman was reporting only a few introduced locally transmitted cases due to imported malaria. There was a significant reduction in the malaria burden in the Islamic Republic of Iran and Saudi Arabia. Reduction of morbidity was also recorded in several high burden countries, such as Afghanistan, and certain areas in Somalia, Sudan and Yemen.

2. Regional malaria situation

2.1 Regional overview

In 2012, the WHO Eastern Mediterranean Region comprised 23 countries located in north Africa (Egypt, Libya, Morocco and Tunisia), sub-Saharan Africa (Djibouti, Somalia, Sudan and South Sudan) and south-west Asia (Afghanistan, Bahrain, Iraq, Islamic Republic of Iran, Jordan, Kuwait, Lebanon, Oman, Pakistan, occupied Palestinian territory, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates and Yemen).

Geographical diversity in the Region determines malaria variability in terms of endemicity, intensity of transmission and type of malaria. The malaria-endemic countries of the Region are situated in the three eco-epidemiological zones of malaria: afrotropical, oriental and palaeartic. In Saudi Arabia, Yemen and the sub-Saharan countries of the Region (Djibouti, Somalia, Sudan, South Sudan), *P. falciparum* is predominant and the main vectors are *An. arabiensis* and *An. funestus*. In the other endemic countries, mainly Afghanistan, Islamic Republic of Iran and Pakistan, both *P. falciparum* and *P. vivax* are transmitted and the main vectors are *An. culicifacies*, *An. stephensi*, *An. superpictus*, *An. sakharovi* and *An. fluviatilis*.

Countries of the Region have encountered strikingly dissimilar challenges that range from maintaining malaria-free status to controlling unstable and stable types of malaria, thus demanding different malaria control approaches. Currently, the countries are in different phases. Seven countries are in the control phase (Afghanistan, Djibouti, Pakistan, Somalia, Sudan, South Sudan and Yemen). Two countries have low, geographically limited malaria transmission and are in the elimination phase (Islamic Republic of Iran and Saudi Arabia). The remaining countries are in the stage of prevention of re-introduction of malaria. Some eliminated malaria a long time ago (Bahrain, Jordan, Kuwait, Lebanon, Libya, occupied Palestinian territory, Qatar and Tunisia) or in the recent past. Of the latter, two countries have achieved certification of elimination (Morocco and United Arab Emirates) and four countries are not yet certified (Egypt, Iraq, Oman and Syrian Arab Republic). The risk of malaria reintroduction as a result of importation in these countries still exists. Egypt and Oman have had reports of introduced cases or limited outbreaks of indigenous cases.

Table 1. Estimated population at risk of malaria transmission in endemic countries with local transmission, 2012

Country	Total estimated population at risk	% of population at risk
Afghanistan	25 239 957	75.6
Djibouti	461 354	50.0
Iran, Islamic Republic of ^a	772 318	1.0
Pakistan	176 911 550	98.3
South Sudan	11 672 551	100.0
Saudi Arabia ^b	–	–
Sudan	34 559 630	100.0
Somalia	9 797 445	100.0
Yemen	17 530 451	68.6

^a Number of active foci: 444

^b Number of active foci: 68

2.2 Regional burden

Risk. Based on the reported data in 2012, it is estimated that 45% of the population of the Eastern Mediterranean Region are living in areas at risk of local malaria transmission. The number and percentage of the estimated population at risk of malaria in endemic countries with local transmission are shown in Table 1.

Incidence. Four of the 10 countries in the Region with ongoing transmission attained a more than 75% reduction in malaria incidence rates in 2012 compared to 2000 (Afghanistan, Islamic Republic of Iran, Iraq and Saudi Arabia). The number of microscopically confirmed cases has fluctuated from year to year in the other six countries (Djibouti, Pakistan, Somalia, South Sudan, Sudan and Yemen) and it is not possible to conclude whether malaria case incidence is increasing, decreasing or constant.

In 2012, countries in the Region reported a total of 7 043 396 cases (Table 2). Only 17.6% of these were confirmed parasitologically. Five countries accounted for more than 97% of the confirmed cases: Sudan 42%, Pakistan 23%, South Sudan 18%, Yemen 9% and Afghanistan 4%. WHO estimated that 13 million (range 10–18 million) cases of malaria occurred in the Region in 2012, with *P. falciparum* accounting for 72% of them.

Mortality. Based on WHO estimation in 2012, the number of deaths due to malaria in the Region was 18 000 (range 11 000–31 000 deaths), of which 37% were in children under 5 years of age. The reported deaths due to malaria were only 2314 with more than 57% of these from South Sudan.

Prevalence. The data from endemic countries reveal low malaria prevalence. The 2012 survey in Sudan using microscopy showed 2.3% of all ages had parasitaemia. All States had prevalence of <3%, except Blue Nile, Gadarief, South Darfur and West Darfur State (3.8%, 6.5%, 6.3% and 6.6% respectively).

The malaria indicator survey in the southern State in Sudan (now South Sudan), conducted in 2009, showed that the prevalence of malaria using microscopy in children under 5 years of age was 14.2% with a wide range, from 29.3% in Equatoria Region to 2.9% in Upper Nile region. The same survey found higher rates of parasite prevalence by using RDTs (24.5%, 47.7% and 7.8% respectively).

The first nationally representative malaria indicator survey in Djibouti in 2008–2009 showed that of the 6707 individuals examined for malaria parasite infection using RDT, only 42 (0.6%) were positive for the *falciparum* parasite.

Table 2. Reported malaria cases in the Eastern Mediterranean Region, 2012

Country	Total reported malaria cases	Reported confirmed malaria cases	Reported <i>P. falciparum</i> + mixed	Reported imported cases
Afghanistan	391 365	54 840	1 231	–
Bahrain	233	233	14	233
Djibouti	25	25	25	–
Egypt	206	206	180	206
Iraq	8	8	0	8
Iran, Islamic Republic of	1 629	1 629	211	842
Jordan	117	117	50	117
Kuwait	358	358	256	358
Lebanon	115	115	63	115
Libya	88	88	51	88
Morocco	364	364	279	364
Oman	2 051	2 051	–	2 029
Pakistan	4 285 449	290 781	74 831	–
occupied Palestinian territory	0	0	0	0
Qatar	708	708	66	708
Saudi Arabia	3 406	3 406	1 283	3 324
Somalia	59 709	18 842	–	–
South Sudan	1 125 039	225 371	–	–
Sudan	1 001 571	526 931	–	–
Syrian Arab Republic	42	42	40	42
Tunisia	70	70	62	70
United Arab Emirates	5 165	5 165	368	5 165
Yemen	165 678	109 908	109 506	–

In Yemen, the prevalence of malaria shown in the malaria indicator survey conducted in 2009 was 1.5%: Tihama, which shoulders about 60% of the malaria burden, has a higher prevalence of malaria (4.5%). Yet these demonstrated a marked reduction compared to the data from the school surveys conducted in 2001 and 2008 in the Tihama area (21.9% and 7.6% respectively).

Annex 1 summarizes the regional malaria profile.

2.3 Coverage of key anti-malaria interventions

Population coverage with antimalarial interventions in the seven countries of the Region with a high burden of malaria (Afghanistan, Djibouti, Pakistan, Somalia, Sudan, South Sudan and Yemen) has risen as a result of increased investment.

Prevention

By 2012 all malaria endemic countries in the Region had adopted a policy of free-of-charge distribution of long-lasting insecticidal nets (LLINs). Seven countries distribute LLINs to all age groups and five countries distribute mainly through mass campaigns.

The Sudan malaria indicator survey conducted in 2012 showed that ownership of insecticide-treated nets was 62% in targeted states. In Afghanistan, the percentage of households that had at least one LLIN in targeted areas was 43.4%, far below the target of 80%. Usage of LLINs was low, yet slightly higher in children under 5 years of age.

There has been a gradual increase in the number of LLINs distributed in the Region in recent years. The number of LLINs distributed in 2009–2011 showed a marked and significant rise. However, in 2012 there was some decrease in the number of distributed LLINs. Considering that the duration of an LLIN is an average of 3 years and that one net will protect two persons, about 32 million people were protected in 2012, representing 16% decrease in comparison with 2011.

Indoor residual spraying (IRS) is recommended as one of the main vector control interventions in six endemic countries in the Region. IRS and LLINs are used together for malaria control in at least some areas in three countries. The quality of data reported by countries on IRS operations is not good and is incomplete in many countries. The total reported number of people protected by IRS in endemic countries is more than 13.2 million. The highest number is in Sudan with more than 4.5 million, mainly in agricultural areas.

Diagnosis

Malaria diagnosis is free of charge in the public sector in all malaria-endemic countries. Three countries reported that RDTs are used at the community level. Access to diagnostic facilities for malaria is still limited. The health facility survey in Sudan 2009 showed that only 43% of facilities had functional microscopy and 15.8% had RDTs. The 2009 Pakistan survey showed 34% of health facilities had arrangements for diagnosis of malaria either through malaria microscopy or RDT. A total of more than 3.8 million RDTs were delivered in 2012 for malaria diagnosis in six countries (Pakistan, Saudi Arabia, Somalia, South Sudan, Sudan and Yemen). In 2012, based on the surveillance reports from all countries of the Region, only 17.6% of cases were diagnosed either by microscopy or RDT and the rest were treated on clinical basis.

Treatment

Artemisinin-based combination therapies (ACTs) have been adopted as the first-line treatment in all countries of the Region where falciparum malaria is endemic. In 2012 nine endemic countries reported that ACTs are free of charge for all age groups in the public sector. In five countries ACTs are delivered at community level. Six countries reported that they have adopted pre-referral treatment with quinine/artemether/artesunate suppositories. A 2012 survey in Sudan showed that 56.3% of fever cases among children under 5 years of age who were treated for malaria received ACTs. In some countries many patients are still being treated with artemisinin monotherapies, particularly in the private sector. Access to diagnostic testing is insufficient, resulting in unnecessary use of artemisinin-based combination therapy for patients without malaria. Guided by a pilot project in South Kordofan, Sudan developed a national strategy of community-based management of malaria and other fevers using the services of trained volunteers. Afghanistan developed the national community-based strategy for malaria in late 2010.

3. Malaria country profiles

The Eastern Mediterranean Region spans three different eco-epidemiological zones and includes countries with wide variation in socioeconomic development status. The diversity of environment influences the malaria situation and is a major determinant of success in malaria control between and even within countries. To address these variations, the regional malaria programme has categorized the countries of the Region into three groups (based on information available in 2012). For individual country profiles, see Annex 2 (and Annex 3 for abbreviations).

Group 1: Countries with moderate/high malaria burden, weak health systems, and/or complex emergencies

Objective: To continue reducing the incidence of malaria by the end of 2015 (>75% in comparison to 2000) and reduce malaria mortality to zero in all countries.

The countries of this group are currently Afghanistan, Djibouti, Pakistan, Somalia, Sudan, South Sudan and Yemen. They represent about 48% of the population of the Region. These countries have areas that are at high risk of malaria transmission or are threatened by epidemics and/or complex emergency situations.

Afghanistan reported reductions in confirmed malaria cases of >50% between 2000 and 2010. Djibouti, Pakistan, Somalia, Sudan, South Sudan and Yemen have not reported consistent decreases in the number of cases. Significant reduction of cases was recorded in certain geographic areas such as Khartoum (Sudan) and Socotra (Yemen), the latter being almost malaria-free with no local cases since 2006.

Malaria is considered to be important health problem. Inadequacy, or in some instances lack, of human resources and capacity at the country level is one of the major constraints impeding development, implementation and sustainability of malaria control in the countries of this group. Management of the logistics system continues to be a major problem due to high operational costs. The security situation in some countries also continues to pose a challenge.

Priority is being given to strengthening the capacity of malaria control programmes, especially at lower levels, for country-wide implementation of malaria control interventions. Ensuring universal access to effective diagnostic and treatment services for testing, treating and tracking every case and rational use of cost-effective prevention measures should be emphasized in all malaria-risk areas.

Group 2: Countries with low malaria transmission limited to small geographic areas and targeting malaria elimination

Objective: To interrupt malaria transmission in 50% of endemic districts.

This group currently comprises two countries, Islamic Republic of Iran and Saudi Arabia, which account for 17% of the regional population. These countries have achieved a steady decline in malaria over the past decade. The remaining malaria in these countries includes all epidemiological types of malaria (Palaeartic and Oriental types in the Islamic Republic of Iran and Afrotropical type in Saudi Arabia). The malaria control programme in these countries is self-reliant, has strong political and financial support from the national authorities and is also well-supported by developed health systems at the central and peripheral levels. Certain epidemiological and socioeconomic factors, such as education, equity in resource allocation for marginalized populations and general development in the social and economic infrastructure, also contribute favourably towards the objective of malaria elimination.

The Islamic Republic of Iran recorded a low of 787 local cases in 2012, with significant reduction of *P. falciparum* and mixed cases (only 76 cases). With planned intensification of elimination efforts it is expected that falciparum malaria will be eliminated in the very near future.

In 2012 Saudi Arabia reported 82 local cases only, compared to 4736 in 2000. Saudi Arabia is very close to elimination, but faces several challenges in the last mile of elimination. Addressing these will require a very strong surveillance system and border coordination with Yemen.

The major challenges to achieving the objectives and sustaining these achievements are competing priorities from other communicable and noncommunicable diseases, huge population movement from several malaria-endemic countries and the need for cooperation and coordination of malaria activities with neighbouring countries, especially across the border areas.

Group 3: Countries which have eliminated malaria

Objective: To prevent re-establishment of malaria transmission.

This group comprises the countries in which malaria was eliminated a long time ago (Bahrain, Jordan, Kuwait, Lebanon, Libya, occupied Palestinian territory, Qatar and Tunisia), and those which have achieved certification of elimination in the past decade (Morocco and United Arab Emirates). It also includes countries that have interrupted local transmission for more than three years within the past decade, but where elimination is not yet certified (Egypt, Iraq, Oman and Syrian Arab Republic). In all these countries a few local cases may occur as a result of importation but the programme is strongly committed and capable of proper response to prevent re-establishment of local malaria transmission.

The main challenge for this group is to prevent re-establishment of local malaria transmission in the presence of continual population movements from malaria-endemic countries. Other challenges include maintaining collaboration in border areas and maintaining awareness of malaria risk and the skills to diagnose and promptly treat the disease among the health staff of governmental and private health care facilities. It is equally important to maintain malaria awareness among members of the community, particularly among those individuals regularly travelling to malaria-endemic countries.

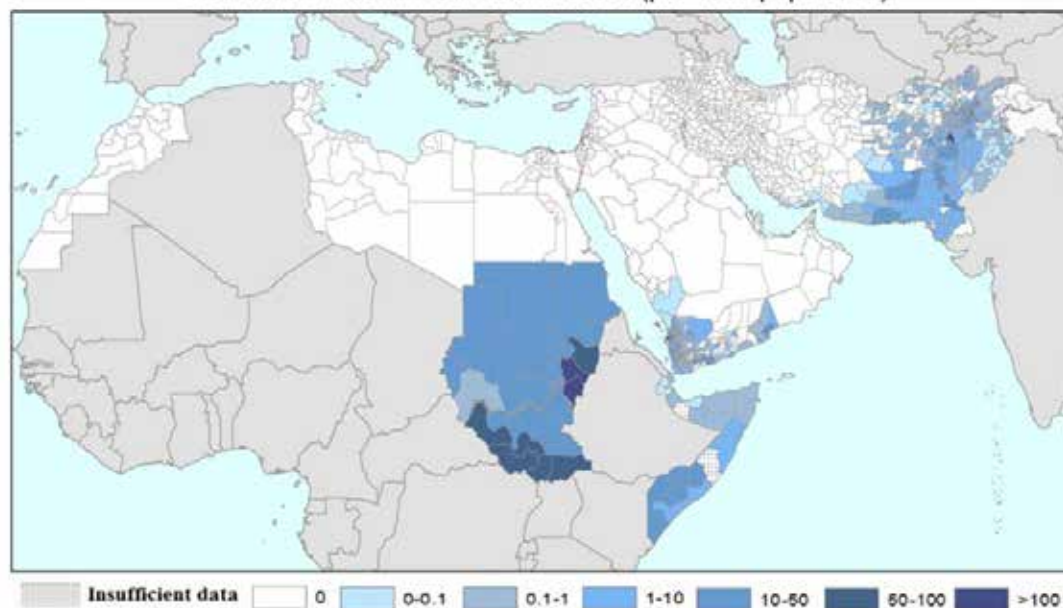
Annex 1.

Regional summary profile

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Data source: Ministry of Health-annual surveillance reports to WHO
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Distribution of confirmed malaria cases (per 1000 population)



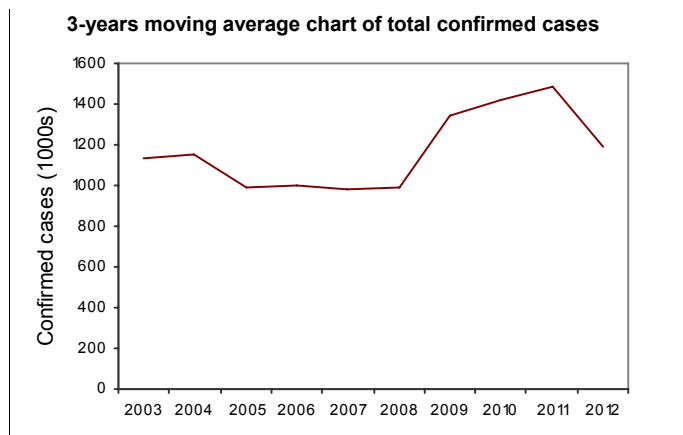
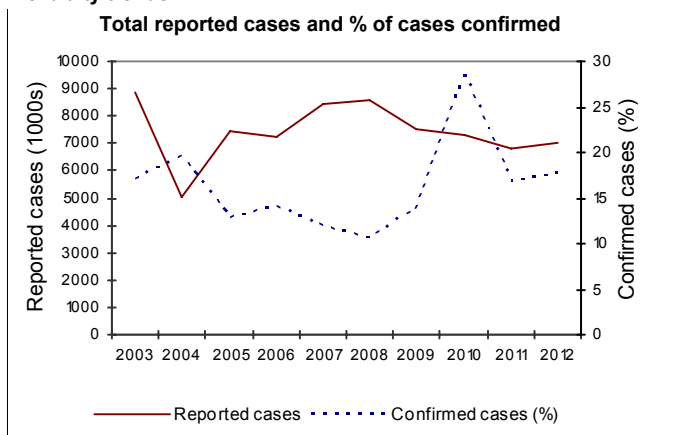
In 2012, it was estimated that about 45.0% of the population of the Eastern Mediterranean Region countries was living in areas with risk of local malaria transmission. In that year, countries in the Region reported 1240900 confirmed malaria cases which is 17.6% of the total reported malaria cases in the Region.

1. Malaria burden and risk

Population, endemicity and malaria burden

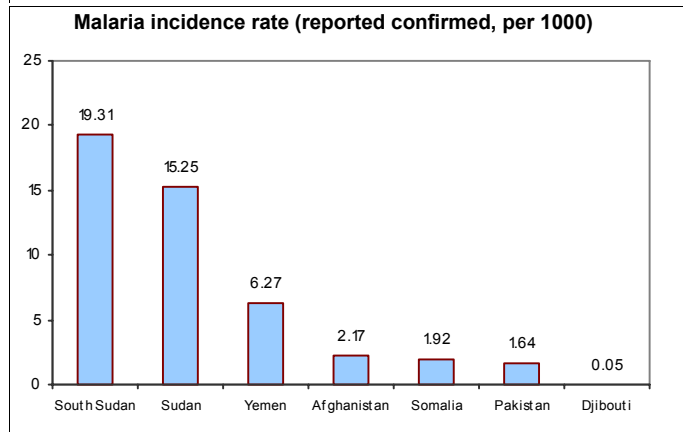
Population	Number	Population by malaria endemicity	Number
Total population	621 027 515	High transmission (≥ 1 cases per 1000 population)	120 498 534
Population under 5 years	74 007 803	Low transmission (< 1 cases per 1000 population)	158 746 169
Male population	315 375 864	Malaria-free (0 cases)	341 782 812
Rural population	310 579 361		

Morbidity trends

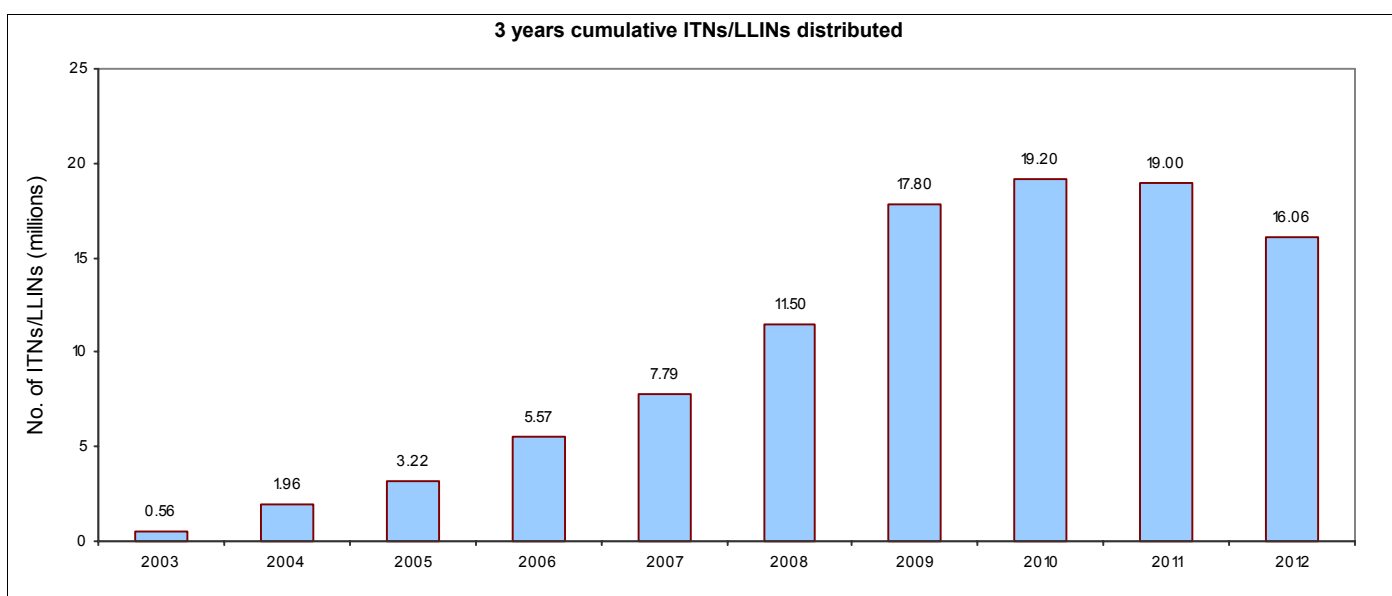
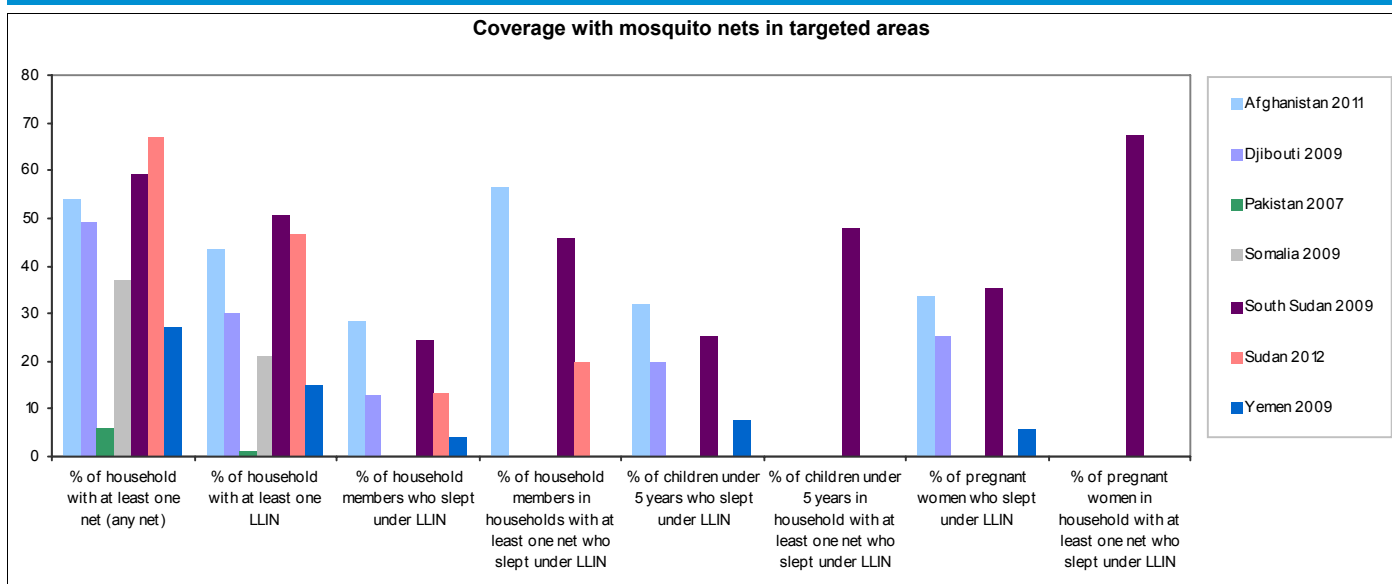


Reported malaria burden

Year	Total reported cases	Total confirmed cases
2003	8 849 683	1 511 823
2004	5 047 120	985 218
2005	7 457 270	952 811
2006	7 256 022	1 025 670
2007	8 452 202	1 014 596
2008	8 599 217	906 354
2009	7 546 404	1 040 449
2010	7 274 892	2 073 856
2011	6 789 460	1 139 476
2012	7 043 038	1 240 900



2. Malaria control interventions coverage



3. Financing malaria control

Funding by source (US\$)

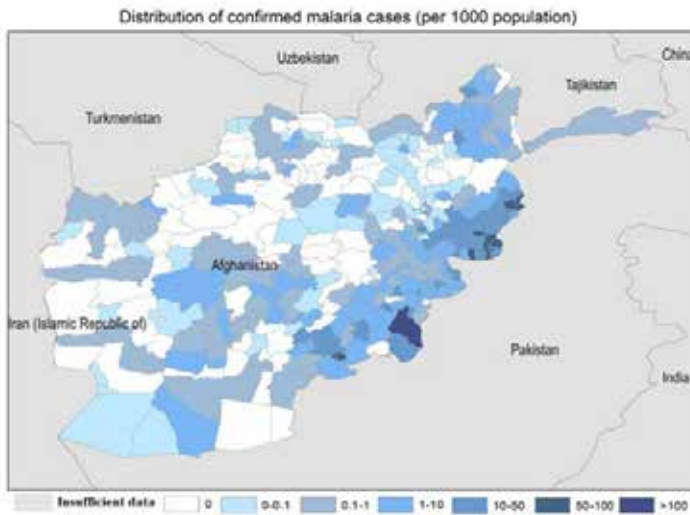
Country name	Government	Government %	GFATM	Others	Total budget
Afghanistan			10 613 985	116 291	10 730 276
Djibouti	1 050 000	80.5%	48 527	206 195	1 304 722
Islamic Republic of Iran	9 222 400	63.7%	5 238 195	12 500	14 473 095
Pakistan	2 500 000	14.1%	15 231 843		17 731 843
Saudi Arabia	29 440 000	99.7%		99 000	29 539 000
Somalia	63 250	0.5%	11 904 217	303 400	12 270 867
South Sudan			38 496 269	14 676 791	53 173 060
Sudan	40 783 892	49.7%	38 398 132	2 816 828	81 998 852
Yemen	2 293 646	13.5%	8 908 540	5 807 093	17 009 279
Total	85 353 188	35.8%	128 839 708	24 038 098	238 230 994

Annex 2.

Country profiles

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Afghanistan accounts for 7.5% of the population at high risk of malaria in the Eastern Mediterranean Region and 4.4% of the confirmed cases. 16.7% of households in targeted areas have at least one ITN for every two household members (2011). The total reported number of available and functional LLINs in the country is 4312833.

1. Malaria burden and risk

Population, endemicity and malaria burden

Population	Number	%
Total population	33 397 058	
Population under 5 years	5 816 834	17.4
Male population	17 275 734	51.7
Rural population	25 849 323	77.4

Population by malaria endemicity

High transmission (≥ 1 cases per 1000 population)	8 987 937	26.9
Low transmission (< 1 cases per 1000 population)	16 252 020	48.7
Malaria-free (0 cases)	8 157 101	24.4

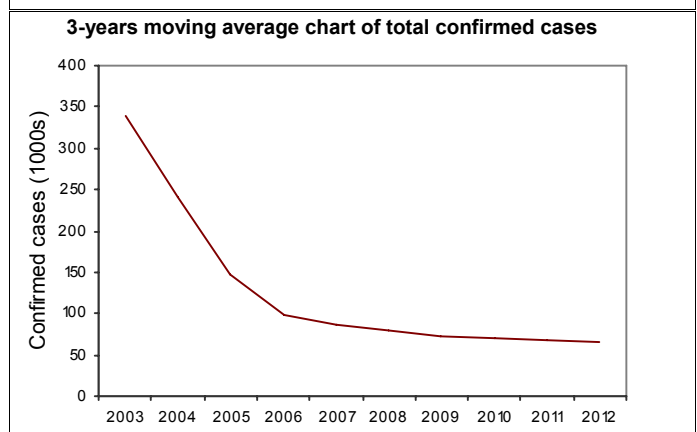
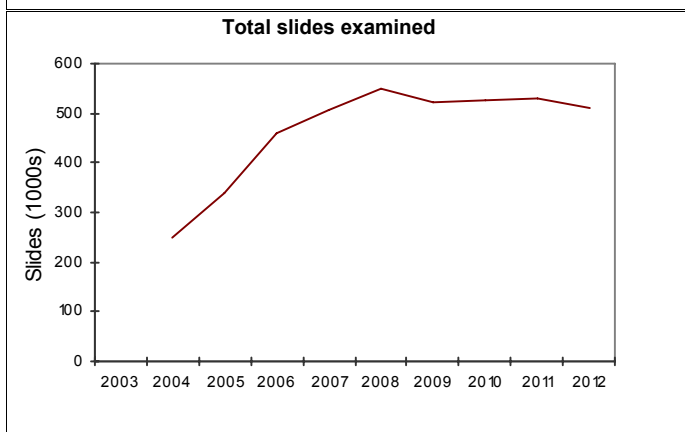
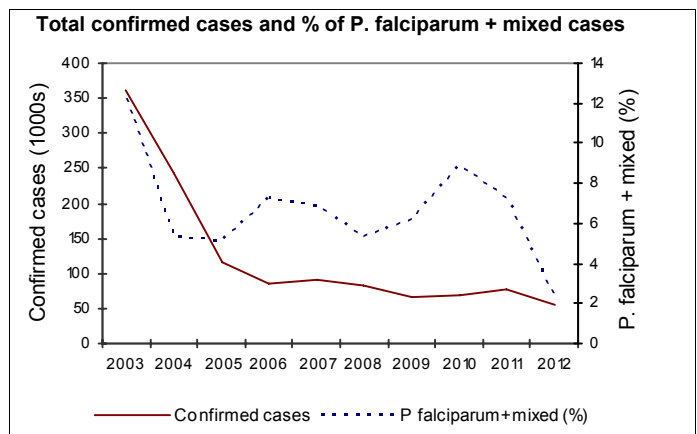
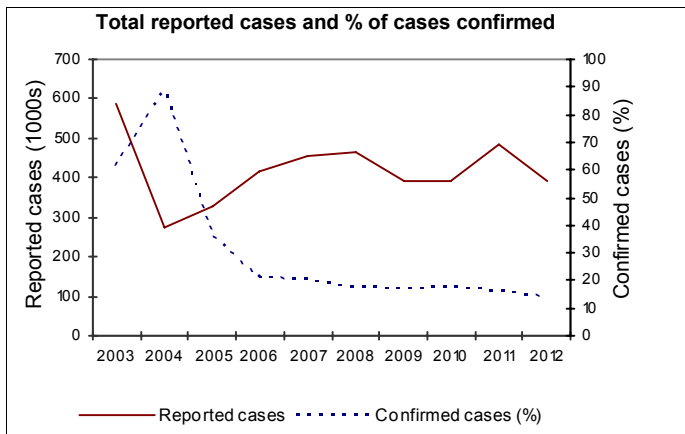
Parasite profile

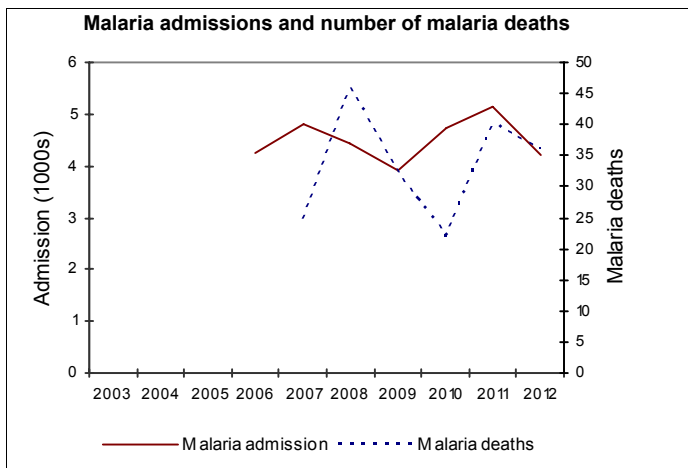
P. vivax > *P. falciparum*

Vector profile

- An. stephensi*
- An. superpictus*
- An. hyrcanus*
- An. pulcherrimus*
- An. culicifacies*
- An. fluviatilis*

Morbidity and mortality trends





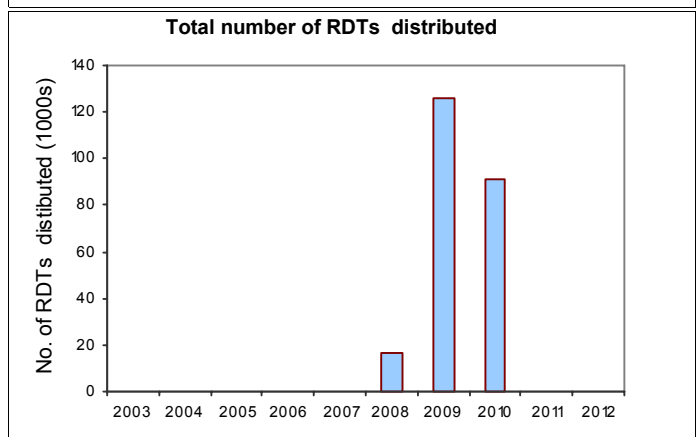
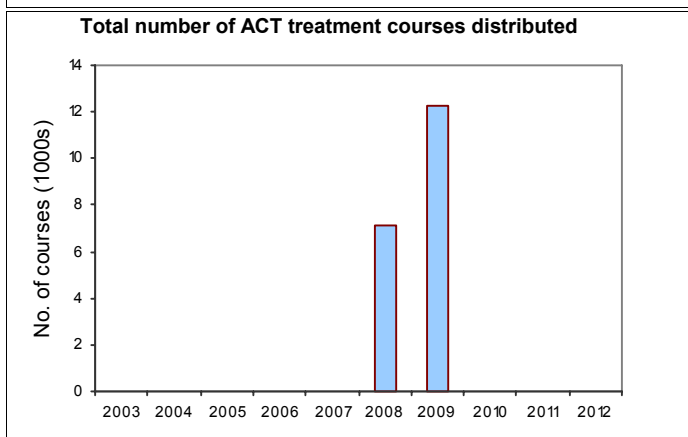
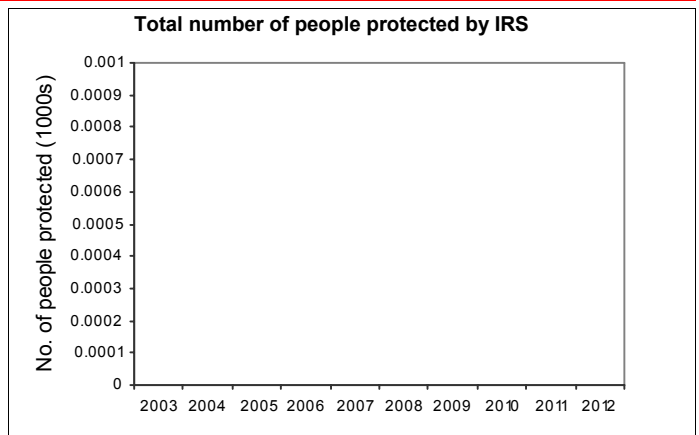
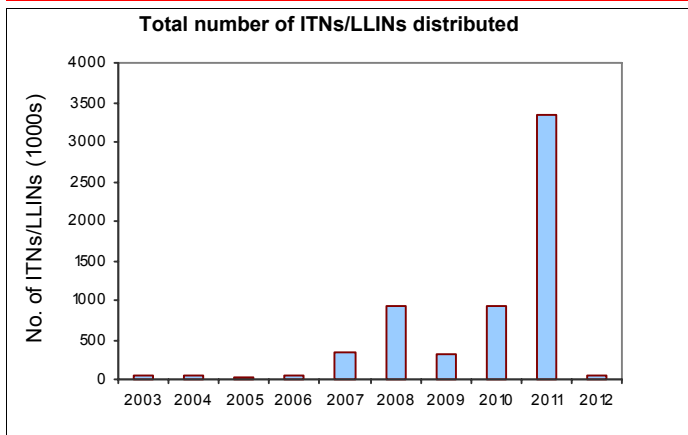
Malaria admissions and deaths

Year	Malaria admissions		Malaria deaths	
	All ages	Under 5 years	All ages	Under 5 years
2003				
2004				
2005			0	
2006	4 233	1 467		
2007	4 793	1 865	25	
2008	4 434	1 239	46	
2009	3 920	923	32	
2010	4 724	1 649	22	
2011	5 144	2 324	40	
2012	4 220	1 616	36	

Reported malaria burden

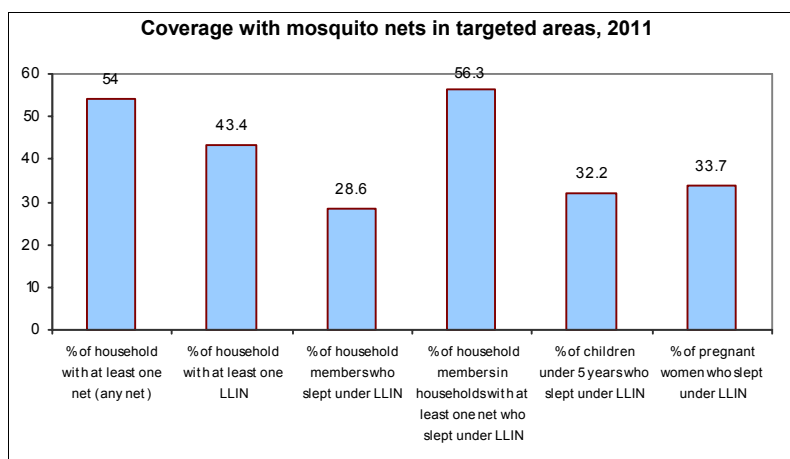
Year	Total reported cases	Confirmed cases			Number of tests			P. falciparum + mixed	P. vivax + others
		Total	Microscopy	RDTs	Total	Microscopy	RDTs		
2003	585 602	360 940	360 940				44 243	316 697	
2004	273 377	242 022	242 022		248 946	248 946	12 789	229 233	
2005	326 694	116 444	116 444		338 253	338 253	5 917	110 527	
2006	414 407	86 129	86 129		460 908	460 908	6 216	79 913	
2007	456 490	92 202	92 202		504 856	504 856	6 283	85 919	
2008	467 123	81 574	81 574		549 494	549 494	4 355	77 219	
2009	390 729	64 880	64 880		521 817	521 817	4 026	60 854	
2010	392 463	69 397	69 397		524 523	524 523	6 142	63 255	
2011	482 748	77 549	77 549	0	531 053	531 053	0	5 581	
2012	391 365	54 840	54 840	0	511 408	511 408	0	1 231	

2. Malaria control interventions coverage



Reported malaria control interventions

Year	Total number of ITNs/LLINs distributed	Total number of ACT treatment courses distributed	Total number of people protected by IRS	Total number of RDTs distributed
2003	48 151			
2004	46 403			
2005	23 055			
2006	40 000			
2007	345 245			
2008	916 723	7 102		16 380
2009	317 631	12 277		126 000
2010	922 956			90 712
2011	3 352 326		0	0
2012	37 551		0	0



3. National drug policy

Unconfirmed uncomplicated	CQ	
P. falciparum treatment	Uncomplicated	AS+SP
	Treatment failure (second line)	QN
	Severe	AM+QN
P. vivax treatment	CQ+PQ(14d / 8weeks)	
Mixed infection treatment (PF+others)	AS+SP	
Last drug policy update (year)	2010	

4. Financing malaria control

Government budget	Budget (US\$)	External contribution	Budget (US\$)
Government budget for malaria		Global Fund	10 613 985
Government expenditure for malaria		World Health Organization	116 291
Expenditure breakdown	Expenditure (US\$)		
Human resources & technical assistance	1 198 735		
Training	282 117		
ITNs/LLINs	7 914 399		
Insecticide & spraying materials	129 400		
Diagnostics	16 850		
Procurement & supply management	282 197		
Infrastructure & other equipments	71 225		
Communication and advocacy	90 728		
Planning, administration and overheads	375 013		
Monitoring and evaluation	205 392		
Others	164 220		

Distribution of confirmed malaria cases (per 1000 population)



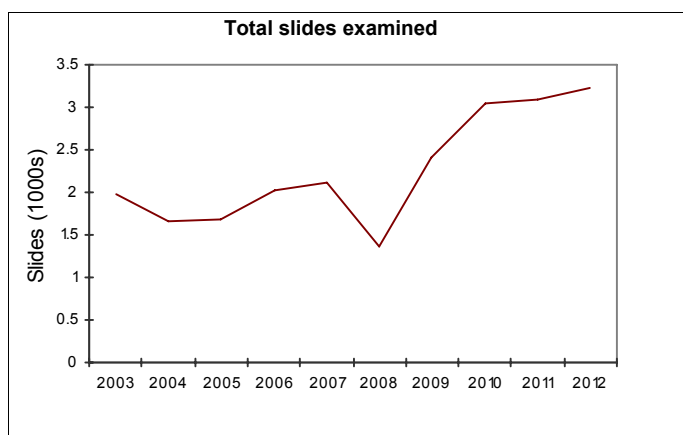
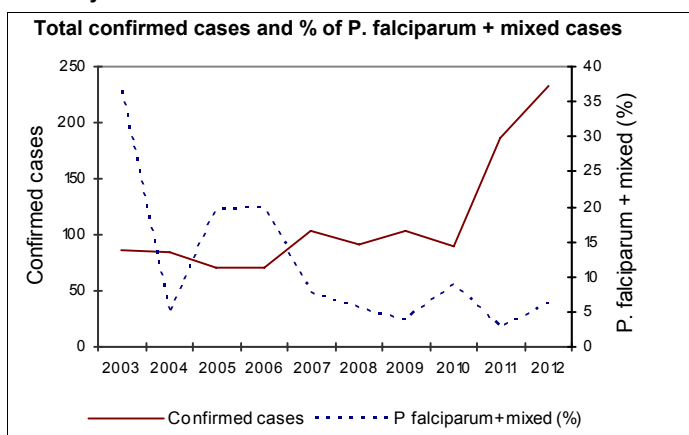
Bahrain is free from local malaria transmission and has 2.5% of reported cases of the malaria-free countries. The last local case was in 1979.

1. Malaria burden and risk

Population

Population	Number	%
Total population	1 359 485	
Population under 5 years	109 083	8.0
Male population	849 767	62.5
Rural population	149 543	11.0

Morbidity trends



Reported malaria burden

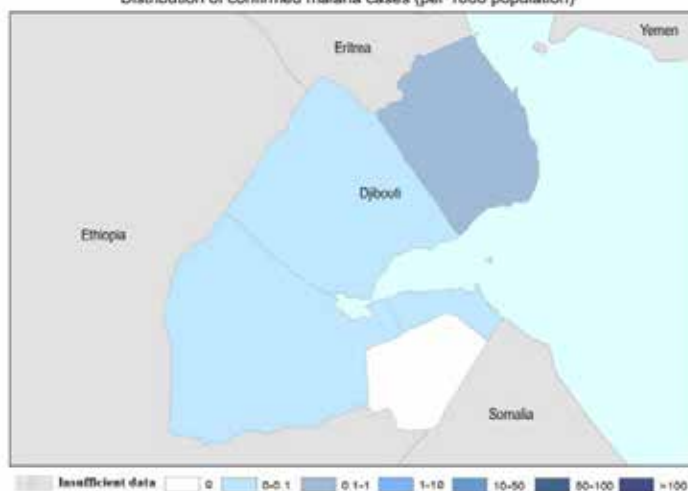
Year	Total slides examined	Total confirmed cases	<i>P. falciparum</i> + mixed	<i>P. vivax</i> + others	Total imported cases	Total local cases
2003	1 980	87	32	54	87	0
2004	1 655	85	4	81	85	0
2005	1 686	71	14	57	71	0
2006	2 014	70	14	54	70	0
2007	2 117	103	8	95	103	0
2008	1 361	91	5	86	91	0
2009	2 418	103	4	99	103	0
2010	3 038	90	8	82	90	0
2011	3 096	186	5	181	186	0
2012	3 221	233	14	219	233	0

2. National drug policy

Unconfirmed uncomplicated		
	Uncomplicated	QN+D
P. falciparum treatment	Treatment failure (second line)	SP
	Severe	QN
P. vivax treatment		CQ+PQ
Mixed infection treatment (PF+others)		
Last drug policy update (year)		2006

3. Financing malaria control

Distribution of confirmed malaria cases (per 1000 population)



Djibouti accounts for 0.0% of the population at high risk of malaria in the Eastern Mediterranean Region and 0.0% of the confirmed cases. The total reported number of available and functional LLINs in the country is 54800.

1. Malaria burden and risk

Population, endemicity and malaria burden

Population	Number	%
Total population	922 708	
Population under 5 years	116 475	12.6
Male population	461 633	50.0
Rural population	219 290	23.8

Population by malaria endemicity

High transmission (≥ 1 cases per 1000 population)	0	0.0
Low transmission (< 1 cases per 1000 population)	461 354	50.0
Malaria-free (0 cases)	461 354	50.0

Parasite profile

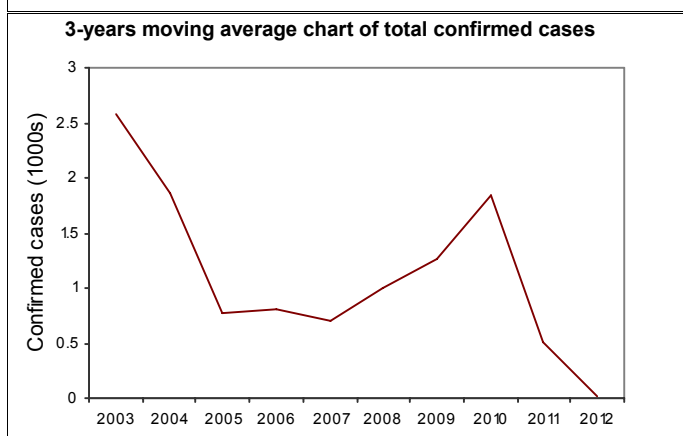
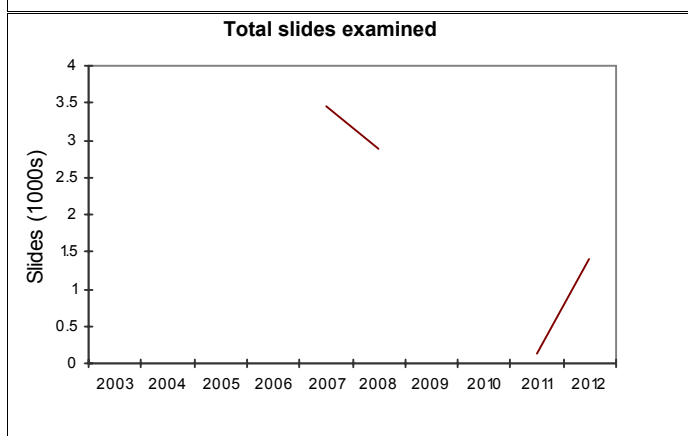
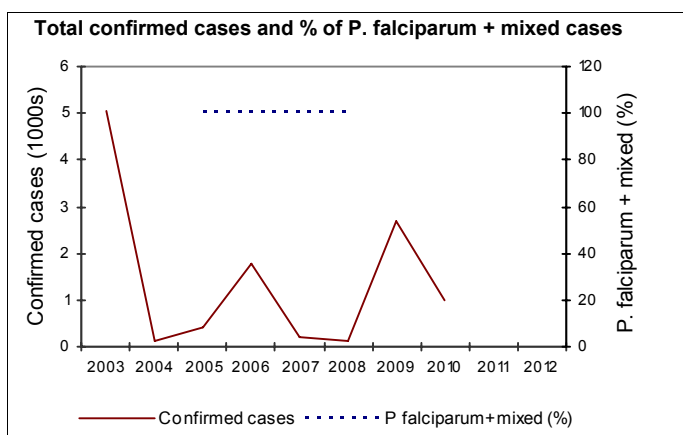
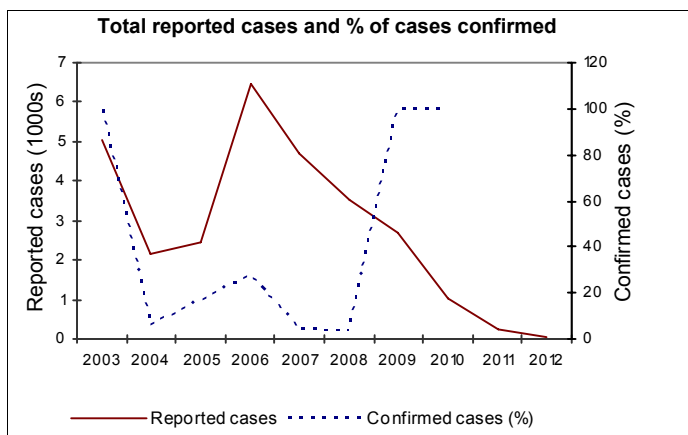
P. falciparum > *P. vivax*

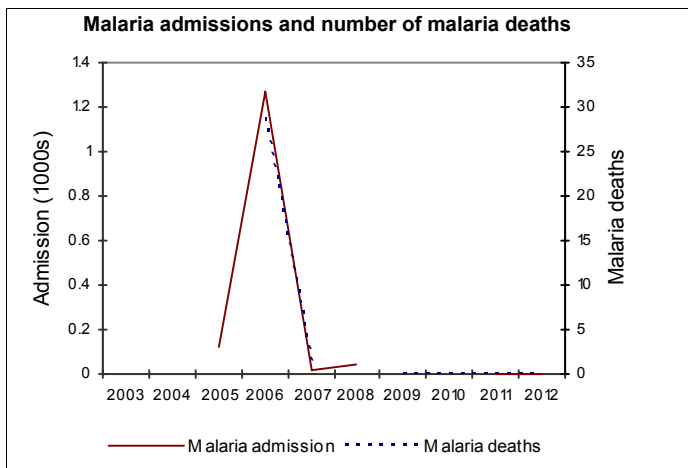
Vector profile

An. gambiae

An. arabiensis

Morbidity and mortality trends





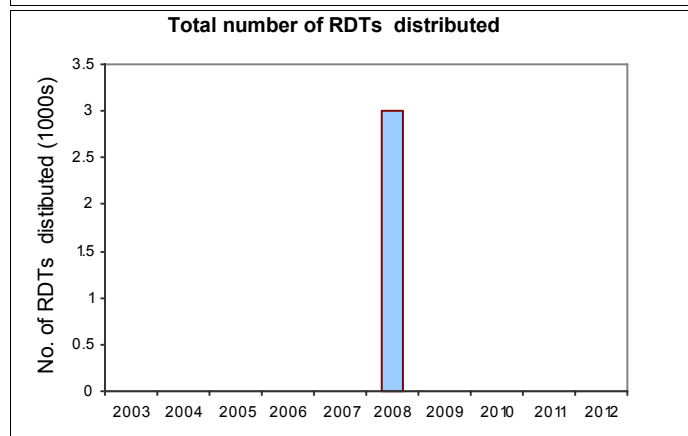
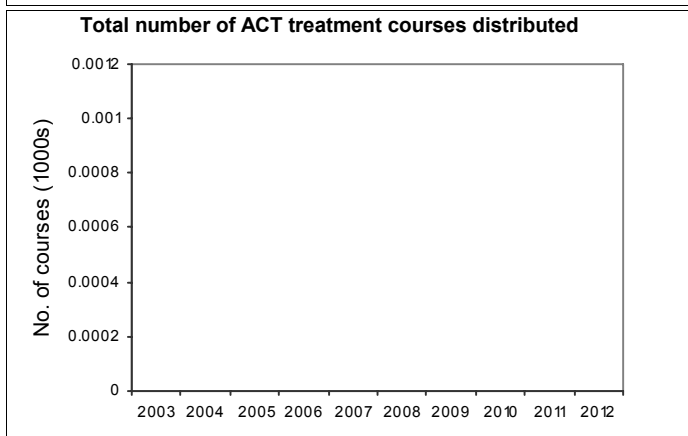
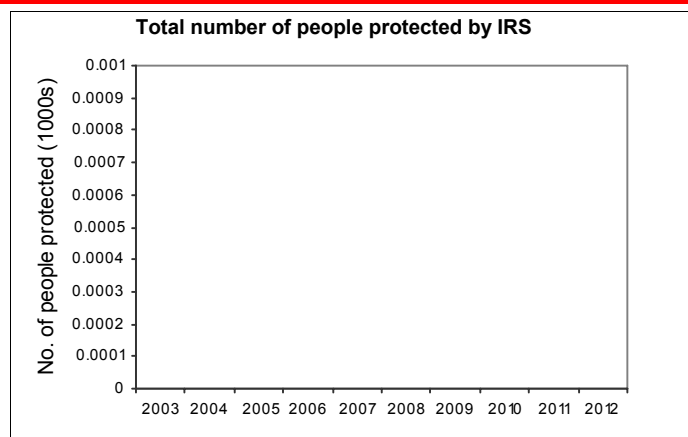
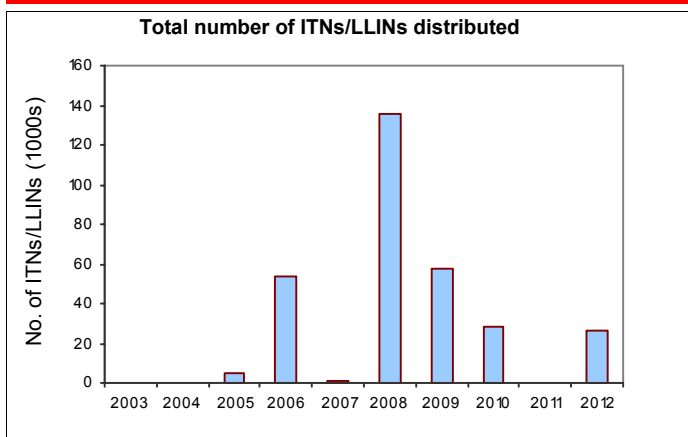
Malaria admissions and deaths

Year	Malaria admissions		Malaria deaths	
	All ages	Under 5 years	All ages	Under 5 years
2003				
2004				
2005	121			
2006	1 269		29	
2007	14		1	
2008	41			
2009			0	
2010			0	0
2011	0	0	0	0
2012	0	0	0	0

Reported malaria burden

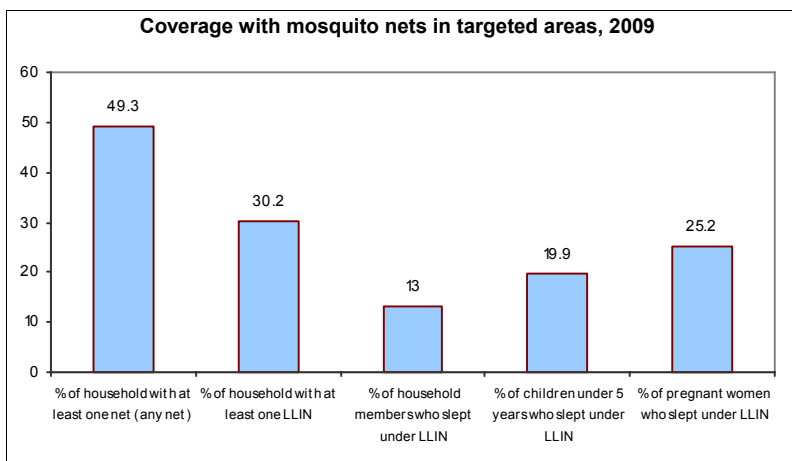
Year	Total reported cases	Confirmed cases			Number of tests			P. falciparum + mixed	P. vivax + others
		Total	Microscopy	RDTs	Total	Microscopy	RDTs		
2003	5 036	5 036	5 036						
2004	2 142	122	122						
2005	2 469	413	413		1 913	1 913	413	0	
2006	6 457	1 796	1 796				1 796	0	
2007	4 694	210	210		3 461	3 461	210	0	
2008	3 528	119	119		2 896	2 896	119	0	
2009	2 686	2 686	2 686						
2010	1 010	1 010	1 010				1 010	0	
2011	232				124	124			
2012	25	25	22	3	1 410	1 410	25	0	

2. Malaria control interventions coverage



Reported malaria control interventions

Year	Total number of ITNs/LLINs distributed	Total number of ACT treatment courses distributed	Total number of people protected by IRS	Total number of RDTs distributed
2003				
2004				
2005	4 400			
2006	54 000			
2007	1 200			
2008	135 484			3 000
2009	57 516			
2010	28 300			
2011	100			
2012	26 400		0	0

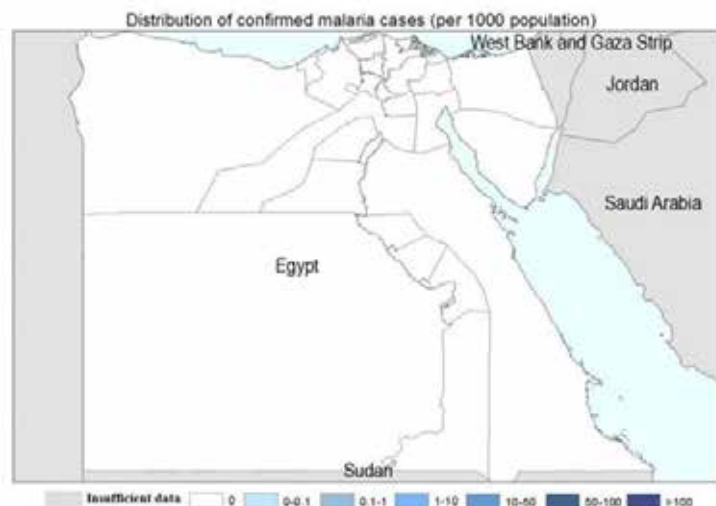


3. National drug policy

Unconfirmed uncomplicated	AS+SP	
P. falciparum treatment	Uncomplicated	AS+SP
	Treatment failure (second line)	AL
	Severe	QN
P. vivax treatment		
Mixed infection treatment (PF+others)		
Last drug policy update (year)	2006	

4. Financing malaria control

Government budget	Budget (US\$)	External contribution	Budget (US\$)
Government budget for malaria	1 050 000	Global Fund	48 527
Government expenditure for malaria		World Bank	8 413
		World Health Organization	55 782
		UNICEF	142 000
Expenditure breakdown	Expenditure (US\$)		
Human resources & technical assistance	83 371		
ITNs/LLINs	132 000		
Infrastructure & other equipments	3 034		
Planning, administration and overheads	36 317		



Egypt is free from local malaria transmission and has 2.2% of reported cases of the malaria-free countries. The last local case was in 1998.

1. Malaria burden and risk

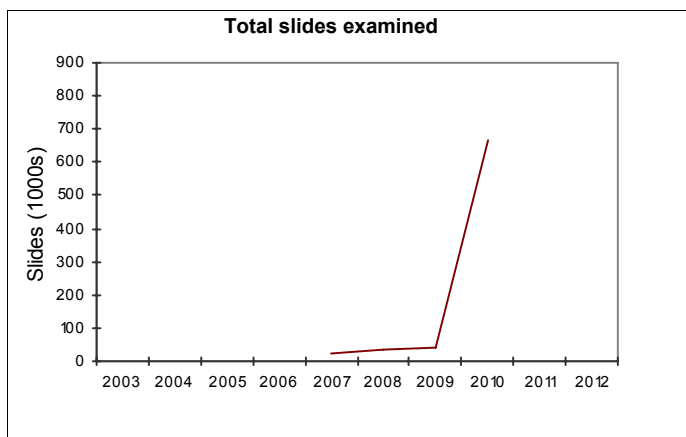
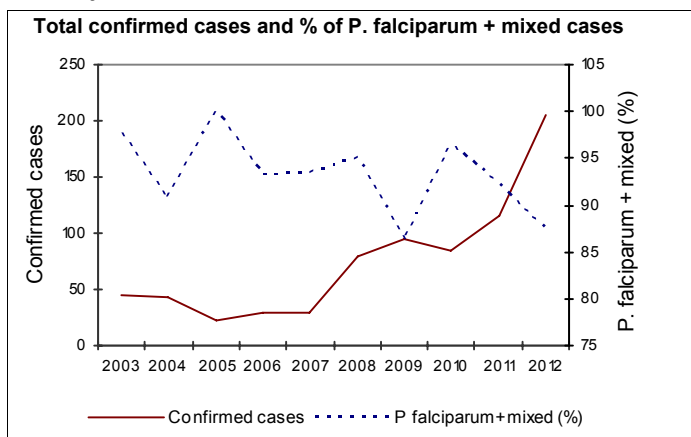
Population

Population	Number	%
Total population	83 958 369	
Population under 5 years	9 150 989	10.9
Male population	42 155 646	50.2
Rural population	46 539 629	55.4

Vector profile

An. pharoensis
An. sergentii

Morbidity trends



Reported malaria burden

Year	Total slides examined	Total confirmed cases	P. falciparum + mixed	P. vivax + others	Total imported cases	Total local cases
2003		45	44	1	45	0
2004		43	39	4	43	0
2005		23	23	0	23	0
2006		29	27	2	29	0
2007	23 402	30	28	2	30	0
2008	34 880	80	76	4	80	0
2009	41 344	94	81	13	94	0
2010	664 294	85	82	3	85	0
2011		116	107	9	116	0
2012	818 600	206	180	26	206	0

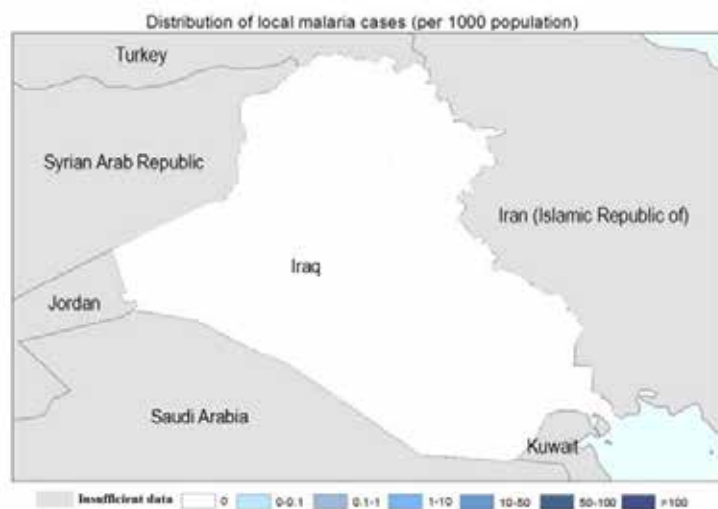
Imported cases (top 10 countries)

Country	P. falciparum	P. vivax	Mixed	Other species	Not classified	Total
Sudan	89	7	0	0	0	96
South Sudan	22	2	0	0	0	24
Nigeria	8	1	0	0	0	9
Equatorial Guinea	6	2	0	0	0	8
Guinea	6	1	0	0	0	7
Chad	6	1	0	0	0	7
Congo	5	1	0	0	0	6
Ghana	3	1	0	0	0	4
Bangladesh	3	1	0	0	0	4
Togo	2	1	0	0	0	3
South Africa	3	0	0	0	0	3
Sierra Leone	2	0	1	0	0	3
Kenya	3	0	0	0	0	3
Eritrea	2	1	0	0	0	3

2. National drug policy

Unconfirmed uncomplicated		AL
	Uncomplicated	AL
P. falciparum treatment	Treatment failure (second line)	QN
	Severe	QN
P. vivax treatment		AL+PQ
Mixed infection treatment (PF+others)		AL+PQ
Last drug policy update (year)		

3. Financing malaria control



Iraq is free from local malaria transmission and has 0.1% of reported cases of the malaria-free countries. The last local case was in 2008.

1. Malaria burden and risk

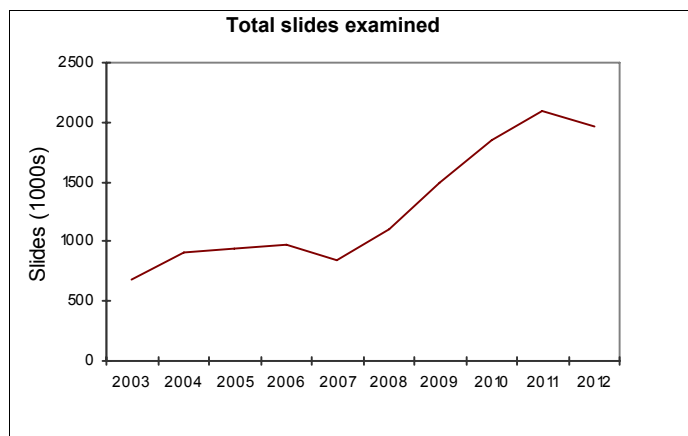
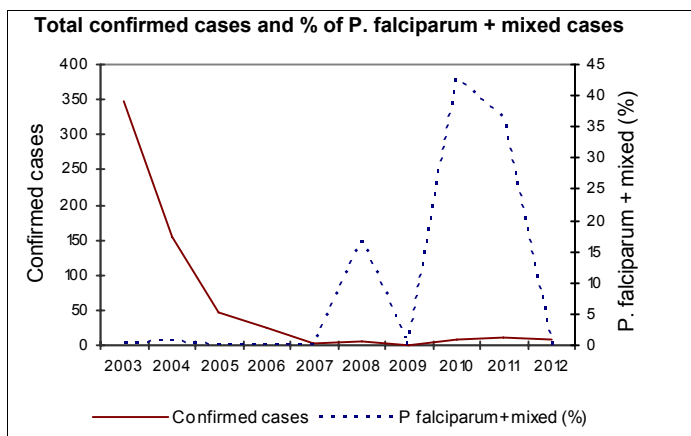
Population

Population	Number	%
Total population	33 703 068	
Population under 5 years	5 387 119	16.0
Male population	16 924 903	50.2
Rural population	11 400 737	33.8

Vector profile

- An. stephensi*
- An. superpictus*
- An. sacharovi*
- An. pulcherrimus*

Morbidity trends



Reported malaria burden

Year	Total slides examined	Total confirmed cases	P. falciparum + mixed	P. vivax + others	Total imported cases	Total local cases
2003	681 070	347	1	2	3	344
2004	913 400	155	1	4	5	150
2005	944 163	47		3	3	44
2006	970 000	24		1	1	23
2007	844 859	3		1	1	2
2008	1 105 054	6	1	1	4	2
2009	1 493 143	1	0	1	1	0
2010	1 849 930	7	3	4	7	0
2011	2 097 732	11	4	7	11	0
2012	1 963 638	8	0	8	8	0

Imported cases (top 10 countries)

Country	P. falciparum	P. vivax	Mixed	Other species	Not classified	Total
Pakistan	0	6	0	0	0	6
India	0	2	0	0	0	2

2. National drug policy

Unconfirmed uncomplicated

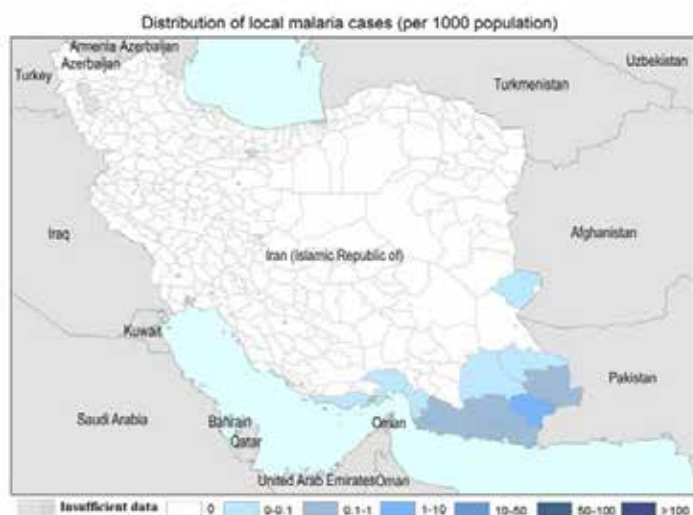
	Uncomplicated	AL
P. falciparum treatment	Treatment failure (second line)	QN+D
	Severe	QN

P. vivax treatment CQ+PQ

Mixed infection treatment (PF+others)

Last drug policy update (year) 2011

3. Financing malaria control



In 2012, the number of locally transmitted malaria cases decreased by 95.4% compared with 2003. During the period 2010 to 2012 the average number of reported locally transmitted cases was 1448.

1. Malaria burden and risk

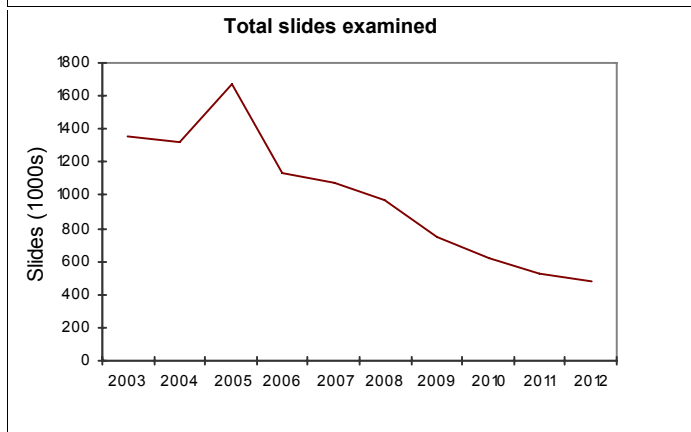
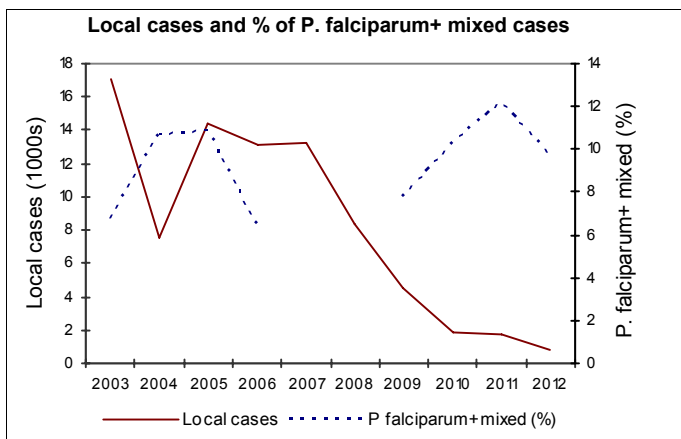
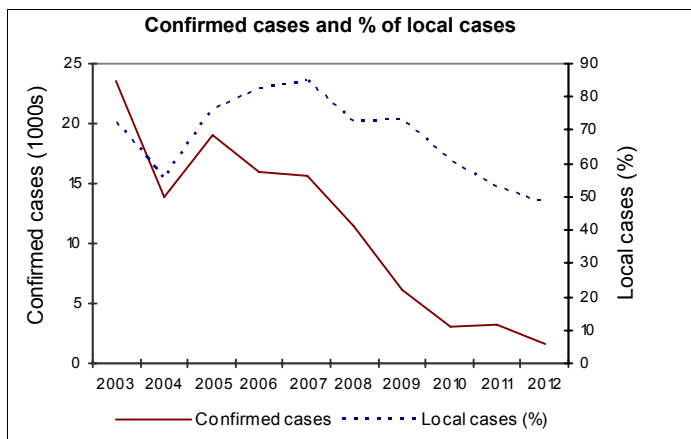
Population, endemicity and malaria burden

Population	Number	%
Total population	75 611 798	
Population under 5 years	6 270 737	8.3
Male population	38 323 334	50.7
Rural population	22 114 184	29.2

Population by malaria endemicity

No. of active foci	444	
No. of people living within active foci	772 318	1.0
No. of people living in malaria-free areas	74 839 480	99.0

Morbidity trends



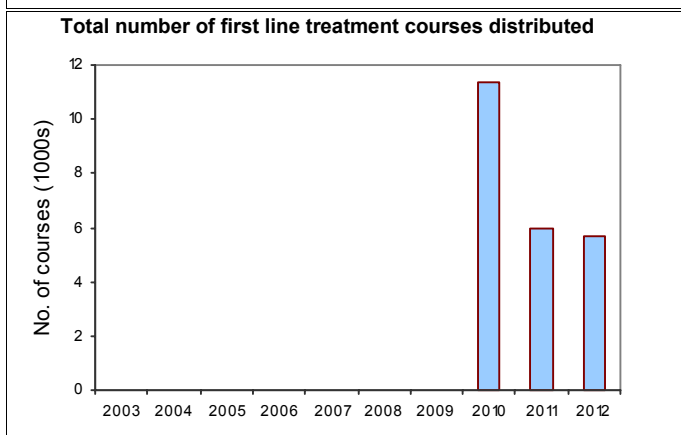
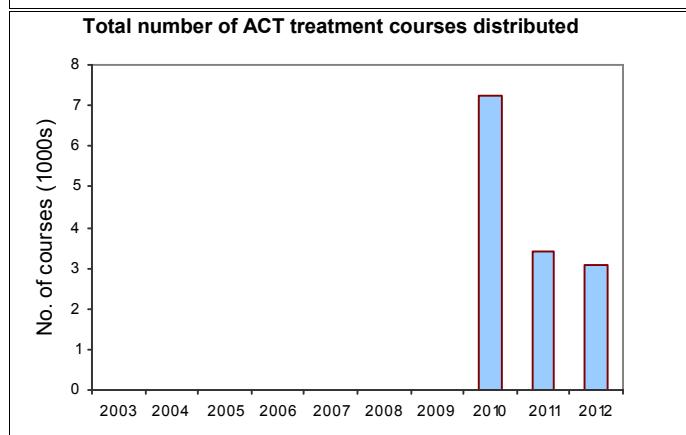
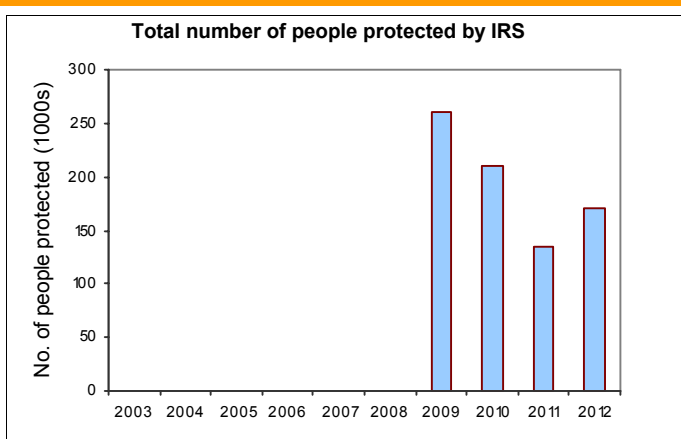
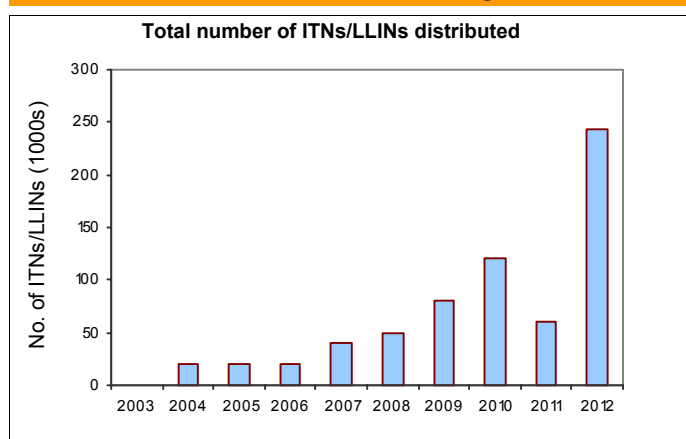
Imported cases (top 10 countries)

Country	P. falciparum	P. vivax	Mixed	Other species	Not classified	Total
Pakistan		89	499	28	0	616
Afghanistan		7	202	7	0	216

Reported malaria burden

Year	Total slides examined	Total confirmed cases	Imported cases			Local cases		
			Total	<i>P. falciparum</i> + mixed	<i>P. vivax</i> + others	Total	<i>P. falciparum</i> + mixed	<i>P. vivax</i> + others
2003	1 358 262	23 562	6 502	3 326	3 176	17 060	1 149	15 911
2004	1 326 108	13 821	6 219	571	5 199	7 602	809	7 242
2005	1 674 895	18 966	4 570	664	3 906	14 396	1 555	12 841
2006	1 131 261	15 909	2 782	381	2 401	13 127	818	12 309
2007	1 074 196	15 712	2 434			13 278		
2008	966 150	11 460	3 111			8 349		
2009	744 586	6 122	1 645	290	1 355	4 477	347	4 130
2010	614 817	3 031	1 184	230	954	1 847	191	1 656
2011	530 470	3 239	1 529	363	1 166	1 710	208	1 502
2012	479 655	1 629	842	135	707	787	76	711

2. Malaria control interventions coverage



3. National drug policy

Unconfirmed uncomplicated

P. falciparum treatment	Uncomplicated	AS+SP (+ PQ in areas with local transmission)
	Treatment failure (second line)	AL (+ PQ in areas with local transmission)
	Severe	AS;QN+D

P. vivax treatment CQ+PQ(14d / 8weeks)

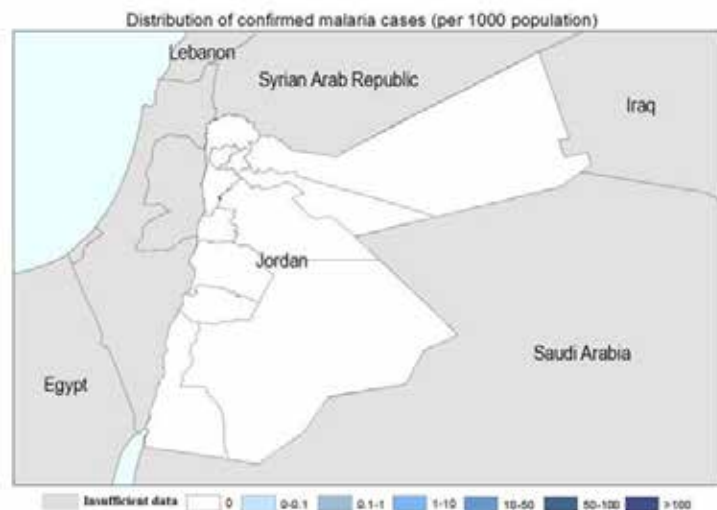
Mixed infection treatment (PF+others)

Last drug policy update (year)

2010

4. Financing malaria control

Government budget	Budget (US\$)	External contribution	Budget (US\$)
Government budget for malaria	9 222 400	Global Fund	5 238 195
Government expenditure for malaria	8 000 000	World Health Organization	12 500
Expenditure breakdown	Expenditure (US\$)		
Human resources & technical assistance	582 875		
Training	694 959		
ITNs/LLINs	1 393 328		
Insecticide & spraying materials	2 270 404		
Diagnostics	1 762 444		
Anti-malarial medicines	83 692		
Procurement & supply management	710 980		
Infrastructure & other equipments	3 036 110		
Communication and advocacy	208 546		
Planning, administration and overheads	155 554		
Monitoring and evaluation	141 488		
Others	2 210 315		



Jordan is free from local malaria transmission and has 1.3% of reported cases of the malaria-free countries. The last local case was in 1970.

1. Malaria burden and risk

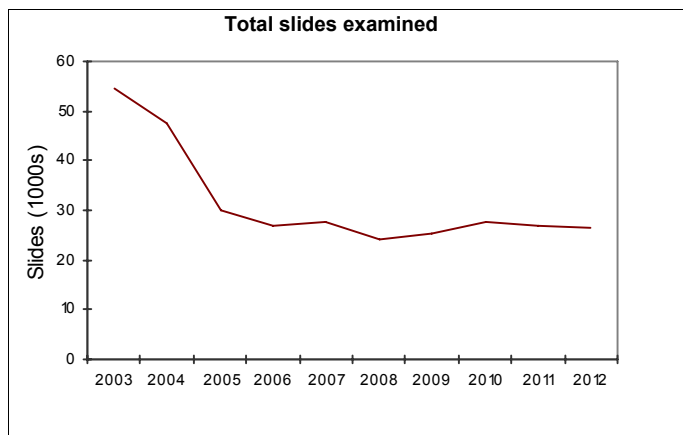
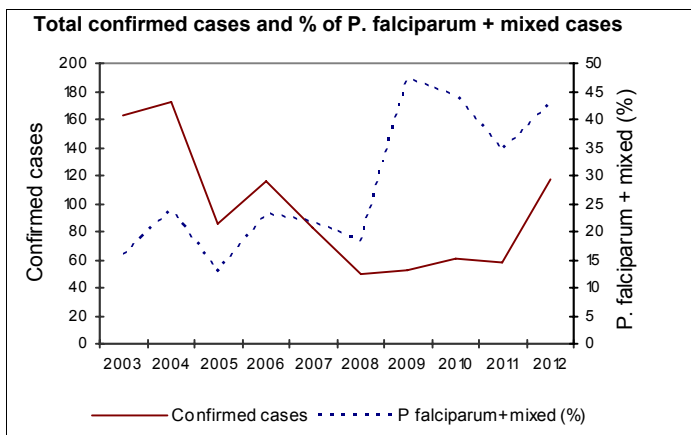
Population

Population	Number	%
Total population	6 457 260	
Population under 5 years	805 364	12.5
Male population	3 319 828	51.4
Rural population	1 117 106	17.3

Vector profile

An. sergentii
An. superpictus

Morbidity trends



Reported malaria burden

Year	Total slides examined	Total confirmed cases	P. falciparum + mixed	P. vivax + others	Total imported cases	Total local cases
2003	54 658	163	26	118	163	0
2004	47 363	173	41	0	173	0
2005	30 079	86	11	0	86	0
2006	26 832	116	25	0	114	2
2007	27 595	83	18	0	83	0
2008	24 071	49	9	36	49	0
2009	25 170	53	25	28	53	0
2010	27 530	61	27	32	59	2
2011	26 860	58	20	38	58	0
2012	26 546	117	50	67	117	0

Imported cases (top 10 countries)

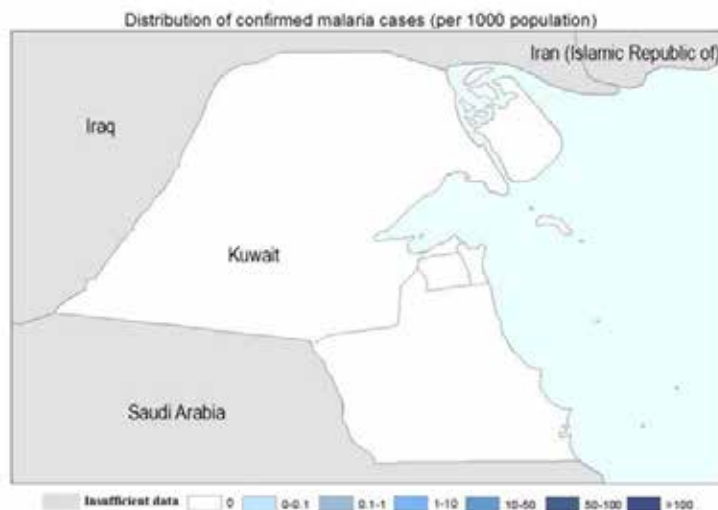
Country	P. falciparum	P. vivax	Mixed	Other species	Not classified	Total
India	6	19	0	0	0	25
Sri Lanka	0	25	0	0	0	25
Liberia	11	3	0	2	0	16
Congo	6	3	0	0	0	9
Côte d'Ivoire	3	1	0	3	0	7
Haiti	5	2	0	0	0	7
Yemen	7	0	0	0	0	7
Sudan	3	3	0	0	0	6
Bangladesh	1	4	0	0	0	5
Chad	2	0	0	0	0	2
Nigeria	2	0	0	0	0	2

2. National drug policy

Unconfirmed uncomplicated		CQ;AL
	Uncomplicated	AL
P. falciparum treatment	Treatment failure (second line)	QN
	Severe	QN
P. vivax treatment		CQ+PQ
Mixed infection treatment (PF+others)		AL+PQ
Last drug policy update (year)		2011

3. Financing malaria control

Government budget	Budget (US\$)	External contribution	Budget (US\$)
Government budget for malaria	3 184 000	World Health Organization	2 919 100
Government expenditure for malaria	2 919 100		



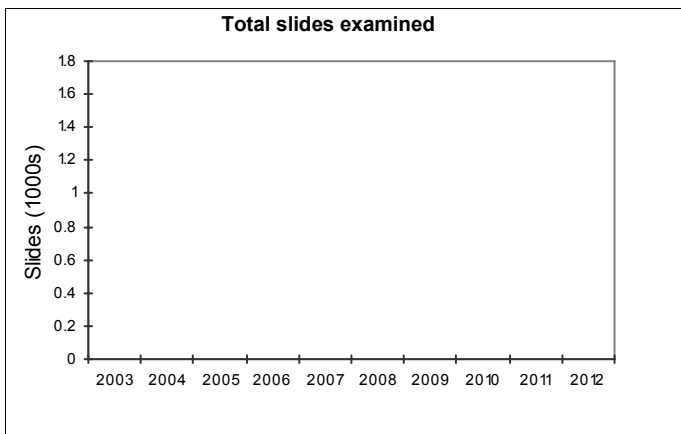
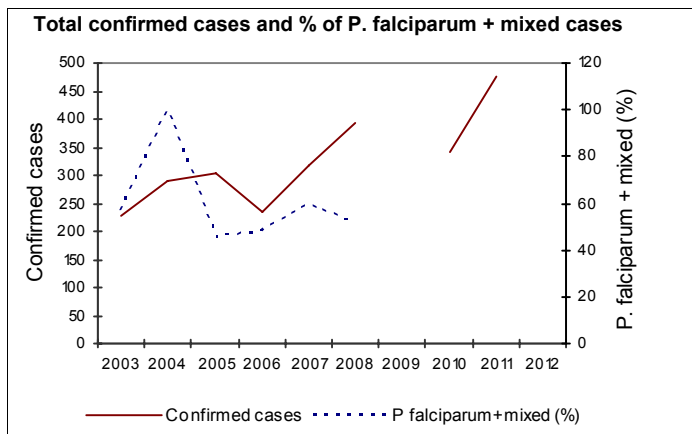
Kuwait is free from local malaria transmission and has ---- of reported cases of the malaria-free countries. The last local case was in 1979.

1. Malaria burden and risk

Population

Population	Number	%
Total population	2 891 553	
Population under 5 years	277 746	9.6
Male population	1 723 409	59.6
Rural population	57 831	2.0

Morbidity trends



Reported malaria burden

Year	Total slides examined	Total confirmed cases	P. falciparum + mixed	P. vivax + others	Total imported cases	Total local cases
2003		228	130	98	228	0
2004		290	290	0	290	0
2005		302	137	165	302	0
2006		235	112	123	235	0
2007		317	190	127	317	0
2008	1 616	392	202	190	392	0
2009						
2010		343			343	0
2011		476	290	186	476	0
2012						

2. National drug policy

Unconfirmed uncomplicated

Uncomplicated

P. falciparum treatment

Treatment failure (second line)

Severe

P. vivax treatment

Mixed infection treatment (PF+others)

Last drug policy update (year)

3. Financing malaria control

Distribution of confirmed malaria cases (per 1000 population)



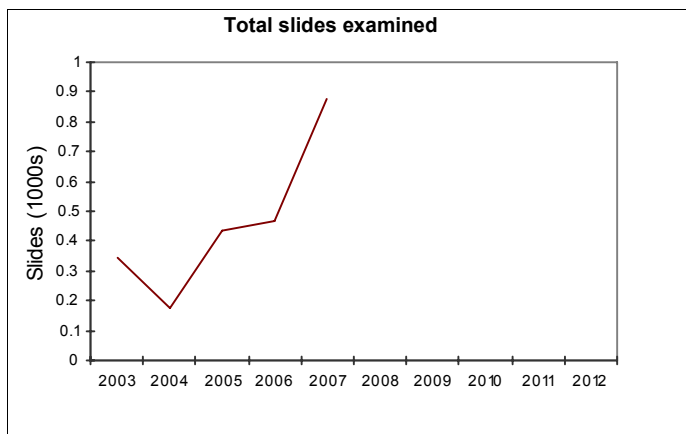
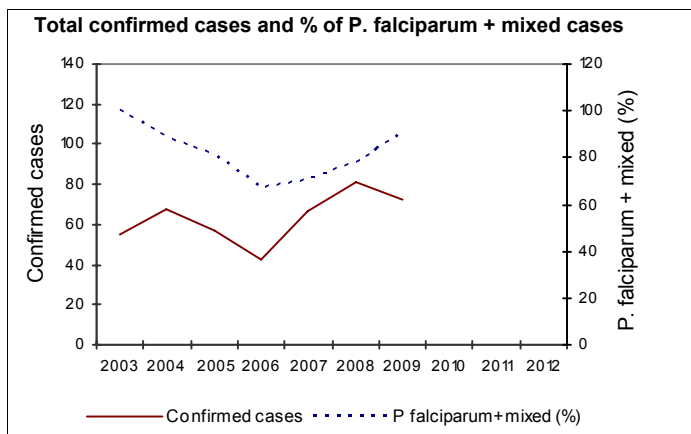
Lebanon is free from local malaria transmission and has 1.3% of reported cases of the malaria-free countries. The last local case was in 1963.

1. Malaria burden and risk

Population

Population	Number	%
Total population	4 291 719	
Population under 5 years	327 428	7.6
Male population	2 094 956	48.8
Rural population	557 923	13.0

Morbidity trends



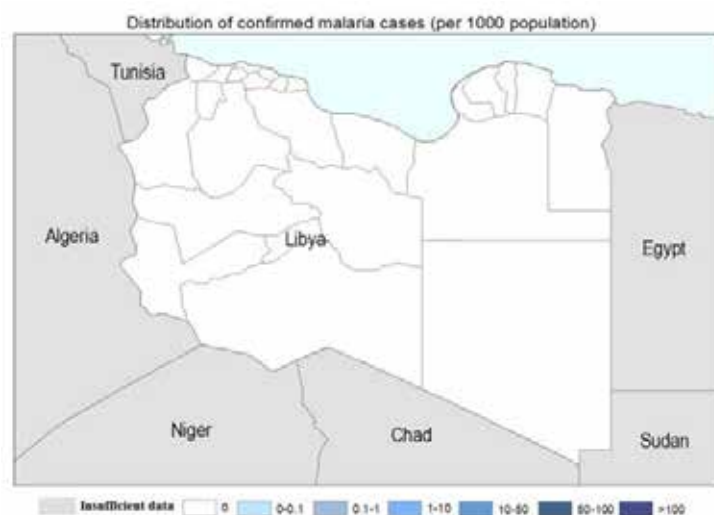
Reported malaria burden

Year	Total slides examined	Total confirmed cases	P. falciparum + mixed	P. vivax + others	Total imported cases	Total local cases
2003	345	55	55	0	55	0
2004	175	68	60	1	68	0
2005	438	57	46	0	57	0
2006	466	42	28	1	42	0
2007	875	67	47	4	67	0
2008		81	63	3	81	0
2009		72	65	2	72	0
2010						
2011						
2012		115	63	3	115	0

2. National drug policy

Unconfirmed uncomplicated		MQ
	Uncomplicated	AL
P. falciparum treatment	Treatment failure (second line)	QN+D
	Severe	QN
P. vivax treatment		CQ+PQ
Mixed infection treatment (PF+others)		
Last drug policy update (year)		2008

3. Financing malaria control



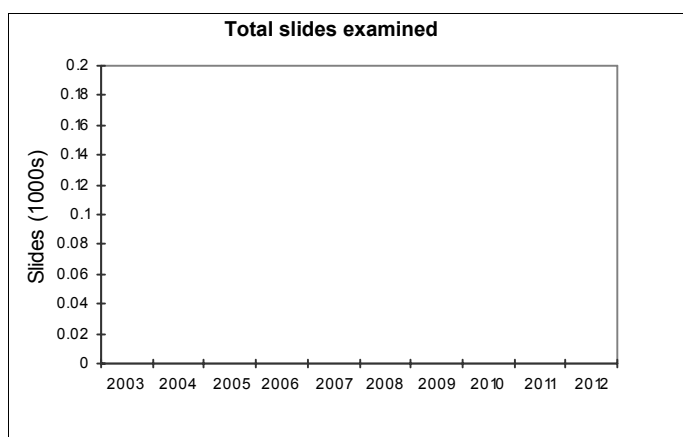
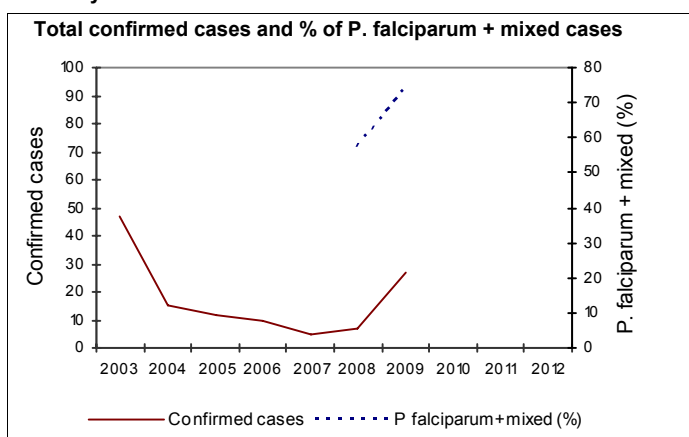
Libya is free from local malaria transmission and has 1.0% of reported cases of the malaria-free countries. The last local case was in 1973.

1. Malaria burden and risk

Population

Population	Number	%
Total population	6 469 497	
Population under 5 years	713 878	11.0
Male population	3 228 993	49.9
Rural population	1 423 289	22.0

Morbidity trends



Reported malaria burden

Year	Total slides examined	Total confirmed cases	<i>P. falciparum</i> + mixed	<i>P. vivax</i> + others	Total imported cases	Total local cases
2003		47	20	9	42	5
2004		15			15	0
2005		12	5	7	12	0
2006		10			10	0
2007		5			5	0
2008		7	4	3	7	0
2009		27	20	4	27	0
2010						
2011						
2012	176	88	51	28	88	0

2. National drug policy

Unconfirmed uncomplicated		
P. falciparum treatment	Uncomplicated	QN;MQ
	Treatment failure (second line)	QN
	Severe	QN
P. vivax treatment		CQ+PQ
Mixed infection treatment (PF+others)		
Last drug policy update (year)		2009

3. Financing malaria control

Distribution of confirmed malaria cases (per 1000 population)



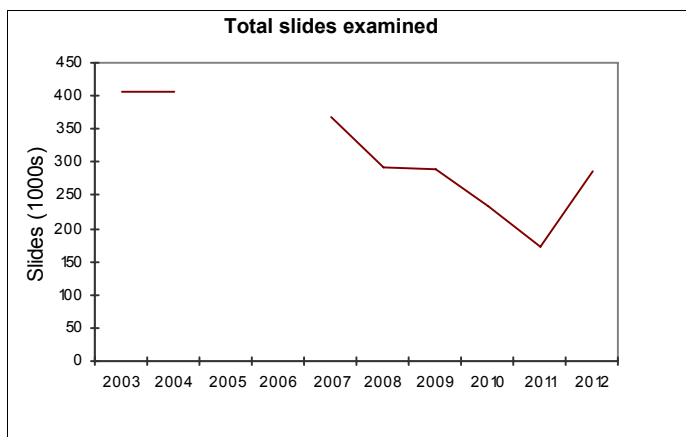
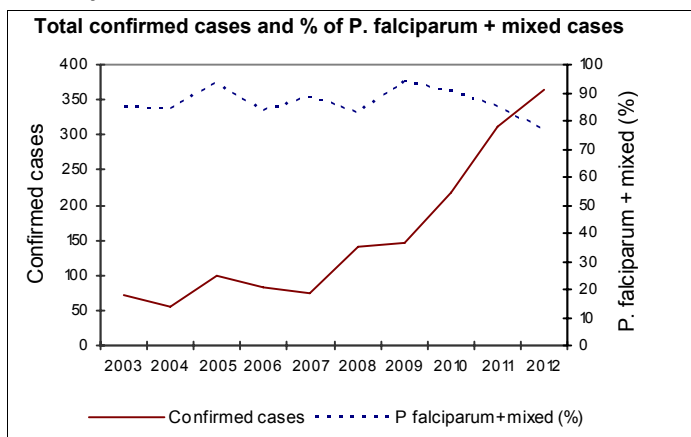
Morocco is free from local malaria transmission and has 4.0% of reported cases of the malaria-free countries. The last local case was in 2004. The country was certified as malaria-free in 2010.

1. Malaria burden and risk

Population

Population	Number	%
Total population	32 598 536	
Population under 5 years	3 043 283	9.3
Male population	15 956 829	48.9
Rural population	13 852 287	42.5

Morbidity trends



Reported malaria burden

Year	Total slides examined	Total confirmed cases	P. falciparum + mixed	P. vivax + others	Total imported cases	Total local cases
2003	405 800	73	62	7	69	4
2004	405 601	56	47	8	55	1
2005		100	93	0	100	0
2006		83	69	0	83	0
2007	367 705	75	66	9	75	0
2008	292 826	142	118	24	142	0
2009	290 566	145	136	3	145	0
2010	232 598	218	194	21	215	0
2011	171 400	312	264	48	312	0
2012	285 039	364	280	84	364	0

Imported cases (top 10 countries)

Country	P. falciparum	P. vivax	Mixed	Other species	Not classified	Total
Côte d'Ivoire	69	0	0	20	0	89
Equatorial Guinea	70	0	0	17	0	87
Mauritania	6	24	0	1	0	31
Guinea	16	0	0	0	0	16
Mali	16	0	0	0	0	16
Burkina Faso	15	0	0	1	0	16
Congo	10	0	0	5	0	15
Senegal	9	1	0	0	0	10
Gabon	3	0	1	1	0	5
Niger	4	0	0	0	0	4

2. National drug policy

Unconfirmed uncomplicated		
	Uncomplicated	AL+PQ
P. falciparum treatment	Treatment failure (second line)	QN+D
	Severe	QN+D
P. vivax treatment		CQ+PQ
Mixed infection treatment (PF+others)		
Last drug policy update (year)		2004

3. Financing malaria control



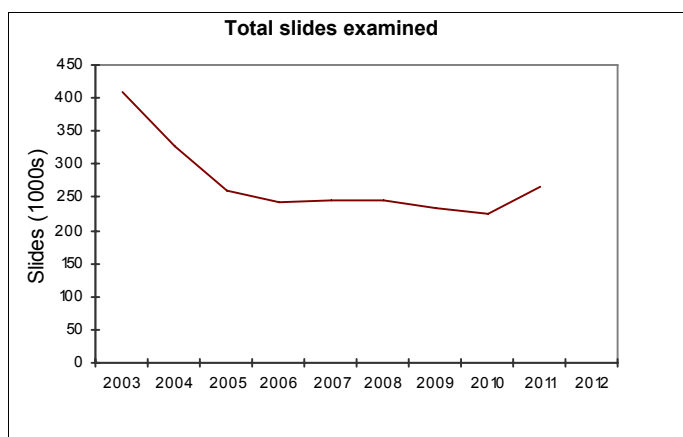
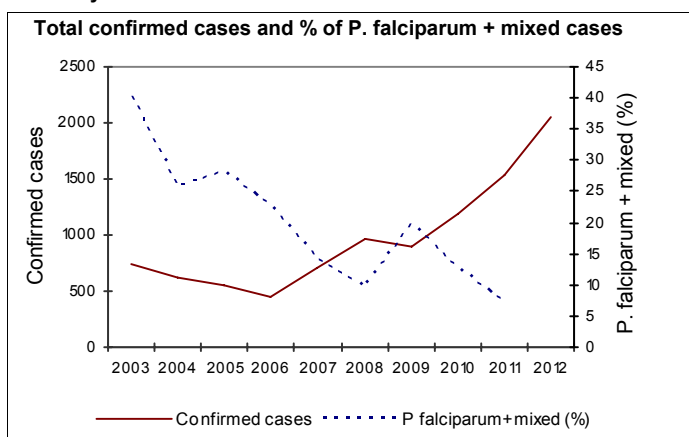
Oman was free from local malaria transmission from 2004 to 2006. Introduced local transmission happened in 2007, 2008 and from 2010 to 2012. Oman accounts for 22.4% of reported cases of the malaria-free countries.

1. Malaria burden and risk

Population

Population	Number	%
Total population	2 904 037	
Population under 5 years	288 874	9.9
Male population	1 716 013	59.1
Rural population	729 734	25.1

Morbidity trends



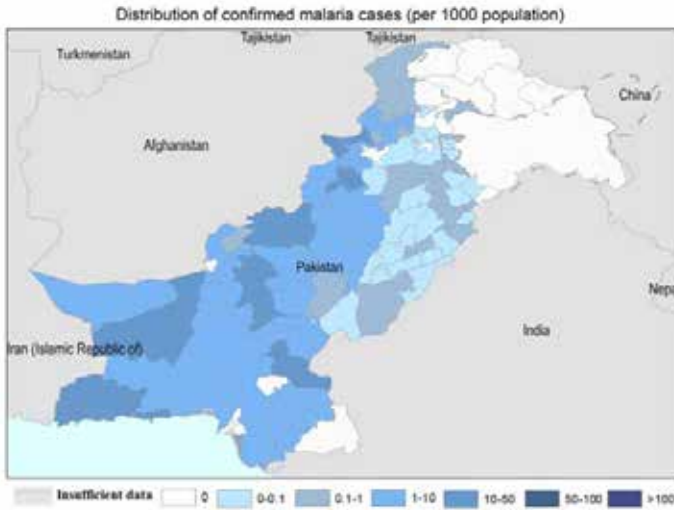
Reported malaria burden

Year	Total slides examined	Total confirmed cases	P. falciparum + mixed	P. vivax + others	Total imported cases	Total local cases
2003	409 532	740	302	430	734	6
2004	326 127	615	158	457	615	0
2005	258 981	544	153	391	544	0
2006	242 635	443	100	343	443	0
2007	244 346	705	101	598	701	4
2008	245 113	965	94	863	957	8
2009	234 803	898	178	718	898	0
2010	226 009	1 193	138	1 031	1 169	24
2011	267 353	1 531	103	1 415	1 518	13
2012		2 051			2 029	22

2. National drug policy

Unconfirmed uncomplicated		
P. falciparum treatment	Uncomplicated	AL+PQ
	Treatment failure (second line)	
	Severe	QN
P. vivax treatment		CQ+PQ
Mixed infection treatment (PF+others)		
Last drug policy update (year)		2007

3. Financing malaria control



Pakistan accounts for 43.2% of the population at high risk of malaria in the Eastern Mediterranean Region and 23.4% of the confirmed cases. The total reported number of available and functional LLINs in the country is 439181.

1. Malaria burden and risk

Population, endemicity and malaria burden

Population	Number	%
Total population	179 951 140	
Population under 5 years	22 295 621	12.4
Male population	91 421 105	50.8
Rural population	115 357 678	64.1

Population by malaria endemicity

High transmission (≥ 1 cases per 1000 population)	52 036 336	28.9
Low transmission (< 1 cases per 1000 population)	124 875 214	69.4
Malaria-free (0 cases)	3 039 590	1.7

Parasite profile

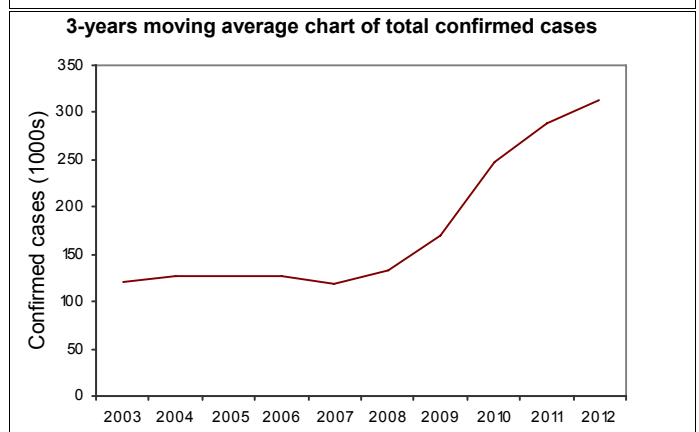
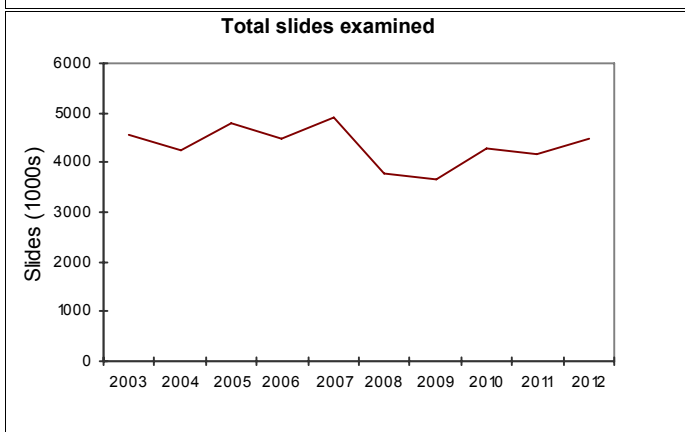
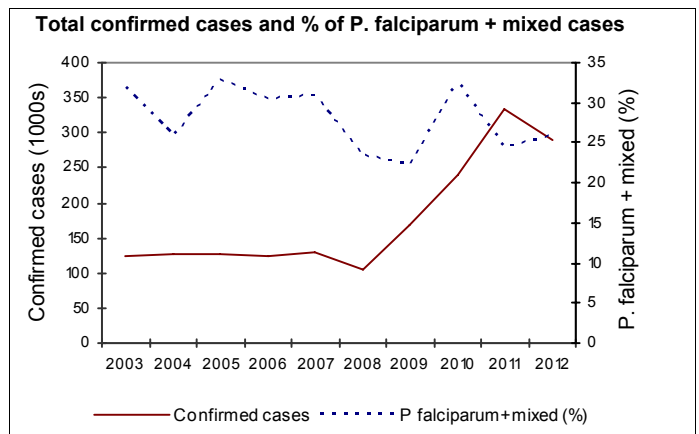
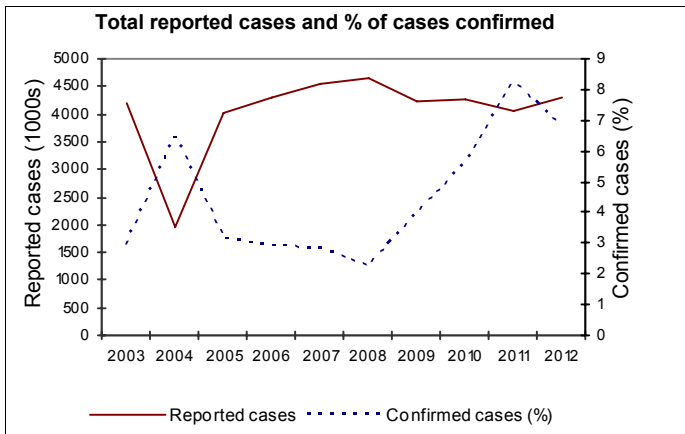
P. vivax > *P. falciparum*

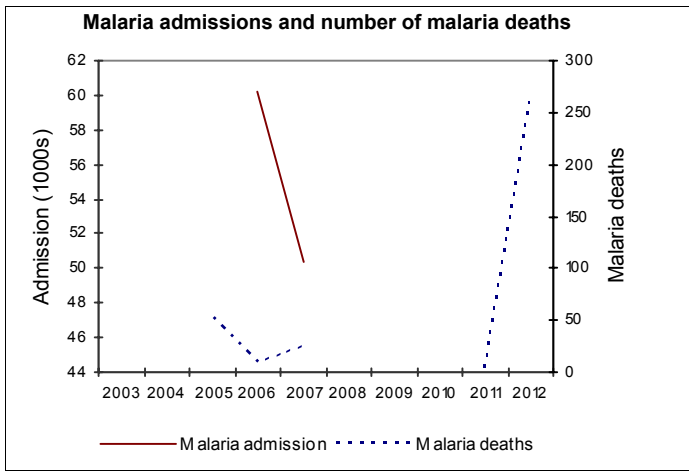
Vector profile

An. culicifacies

An. stephensi

Morbidity and mortality trends





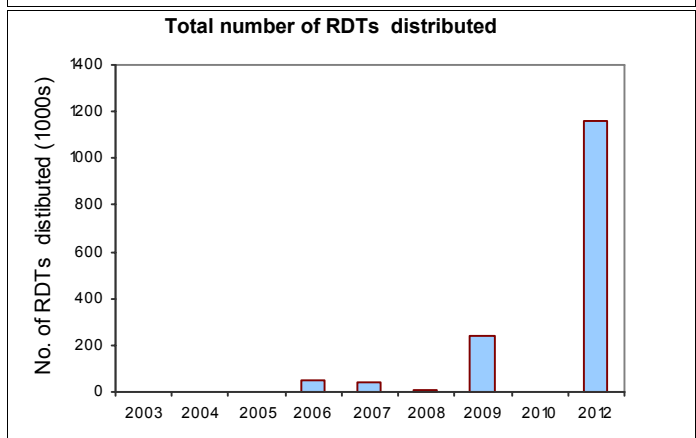
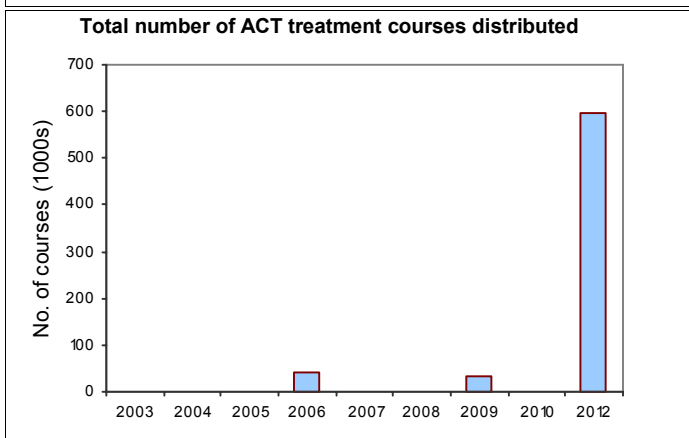
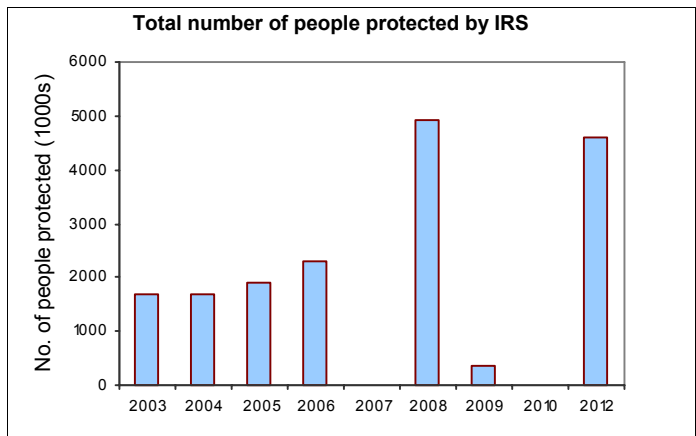
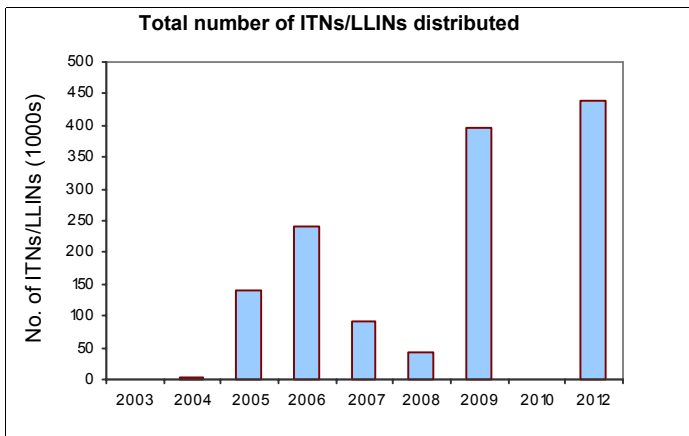
Malaria admissions and deaths

Year	Malaria admissions		Malaria deaths	
	All ages	Under 5 years	All ages	Under 5 years
2003				29
2004	58 389	24 714		
2005			52	52
2006	60 162	21 847	9	9
2007	50 409	18 812	24	24
2008				20
2009				
2010				
2011			4	
2012	57 188		260	

Reported malaria burden

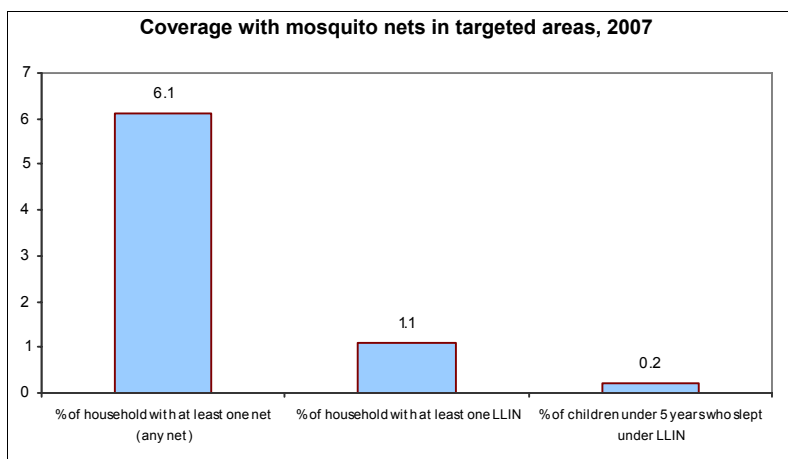
Year	Total reported cases	Confirmed cases			Number of tests			P. falciparum + mixed	P. vivax + others
		Total	Microscopy	RDTs	Total	Microscopy	RDTs		
2003	4 210 611	125 152	125 152		4 577 037	4 577 037		39 976	85 176
2004	1 958 350	126 719	126 719		4 243 108	4 243 108		32 796	93 923
2005	4 022 823	127 826	127 826		4 776 274	4 776 274		42 078	85 748
2006	4 314 637	124 910	124 910		4 490 577	4 490 577		37 911	86 999
2007	4 553 732	128 570	128 570		4 905 561	4 905 561		39 856	88 714
2008	4 658 701	104 454	104 454		3 775 793	3 775 793		24 550	79 904
2009	4 242 032	167 579	132 688	34 891	3 898 793	3 655 272	243 521	37 084	95 604
2010	4 281 356	240 591	220 870	19 721	4 561 070	4 281 346	279 724	77 734	143 136
2011	4 065 802	334 589	287 592	46 997	4 687 357	4 168 648	518 709	81 713	205 879
2012	4 285 449	290 781	250 526	40 255	4 908 279	4 497 330	410 949	74 831	215 950

2. Malaria control interventions coverage



Reported malaria control interventions

Year	Total number of ITNs/LLINs distributed	Total number of ACT treatment courses distributed	Total number of people protected by IRS	Total number of RDTs distributed
2003	0		1 696 380	
2004	2 000		1 690 668	
2005	140 000		1 901 004	
2006	240 000	39 856	2 291 520	46 200
2007	90 000			42 700
2008	41 400		4 938 975	8 000
2009	396 341	34 891	350 000	243 521
2010				
2012	439 181	596 600	4 584 426	1 156 690



3. National drug policy

Unconfirmed uncomplicated		CQ
	Uncomplicated	AS+SP
P. falciparum treatment	Treatment failure (second line)	AL;QN
	Severe	AS;QN
		CQ+PQ(14d)
P. vivax treatment		AL+PQ
Mixed infection treatment (PF+others)		2010
Last drug policy update (year)		

4. Financing malaria control

Government budget	Budget (US\$)	External contribution	Budget (US\$)
Government budget for malaria	2 500 000	Global Fund	15 231 843
Government expenditure for malaria			
Expenditure breakdown	Expenditure (US\$)		
Human resources & technical assistance	1 369 038		
Training	458 800		
ITNs/LLINs	5 230 500		
Insecticide & spraying materials	2 451 624		
Diagnostics	1 528 971		
Anti-malarial medicines	827 158		
Procurement & supply management	2 035 284		
Infrastructure & other equipments	387 933		
Communication and advocacy	127 887		
Planning, administration and overheads	424 676		
Monitoring and evaluation	306 745		
Others	83 226		



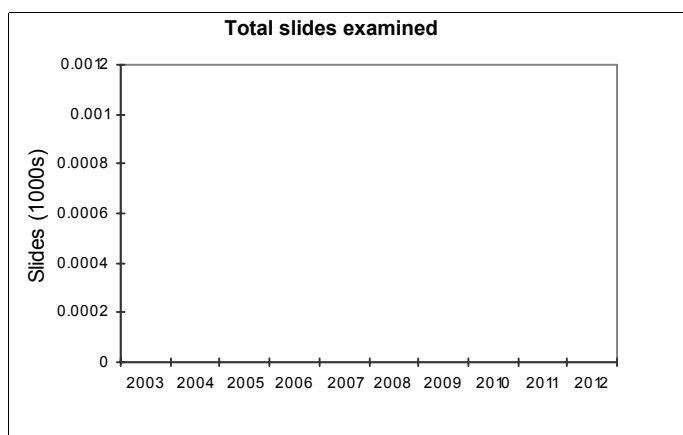
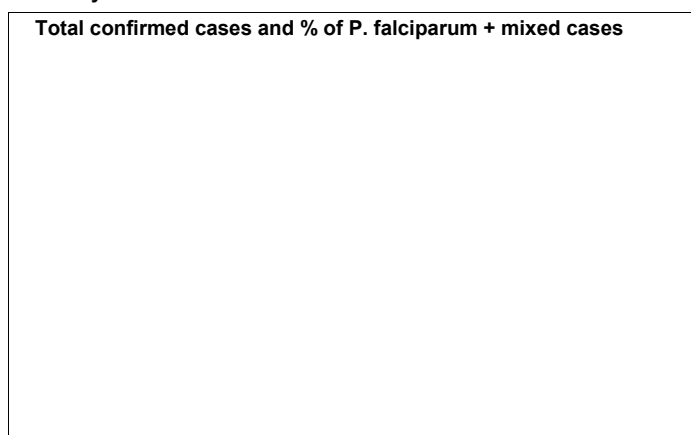
Occupied Palestinian Territory is free from local malaria transmission and has 0.0% of reported cases of the malaria-free countries. The last local case was in 1965.

1. Malaria burden and risk

Population

Population	Number	%
Total population	4 340 000	
Population under 5 years		
Male population		
Rural population	1 137 080	26.2

Morbidity trends



Reported malaria burden

Year	Total slides examined	Total confirmed cases	P. falciparum + mixed	P. vivax + others	Total imported cases	Total local cases
2003		1		1	1	0
2004		0	0	0	0	0
2005		0	0	0	0	0
2006		2			2	0
2007		0	0	0	0	0
2008		0	0	0	0	0
2009		1		1	1	0
2010						
2011						
2012		0	0	0	0	0

2. National drug policy

Unconfirmed uncomplicated

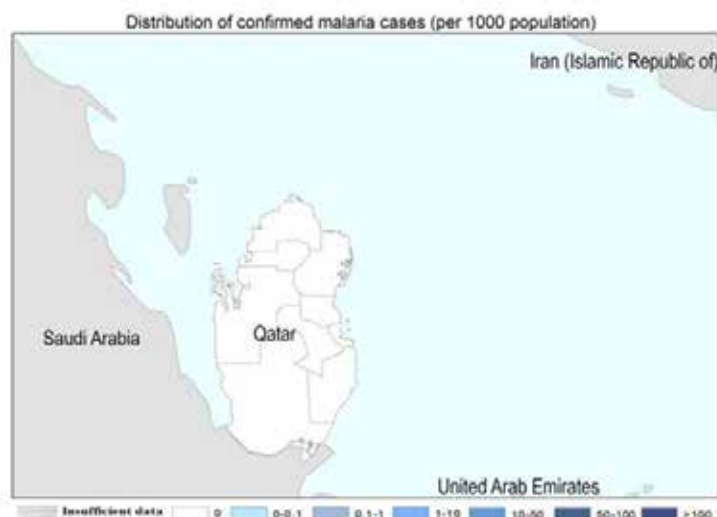
	Uncomplicated
P. falciparum treatment	Treatment failure (second line)
	Severe

P. vivax treatment

Mixed infection treatment (PF+others)

Last drug policy update (year)

3. Financing malaria control



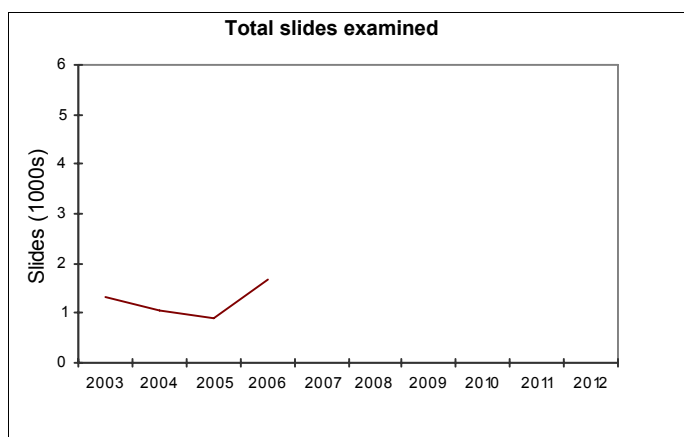
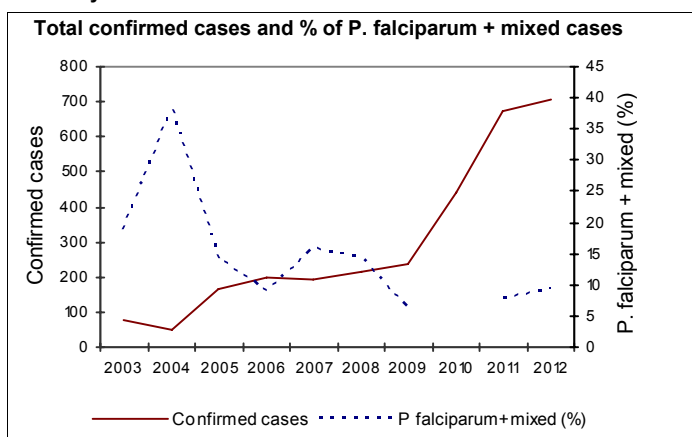
Qatar is free from local malaria transmission and has 7.7% of reported cases of the malaria-free countries. The last local case was in 1970.

1. Malaria burden and risk

Population

Population	Number	%
Total population	1 938 754	
Population under 5 years	102 840	5.3
Male population	1 470 827	75.9
Rural population	19 388	1.0

Morbidity trends



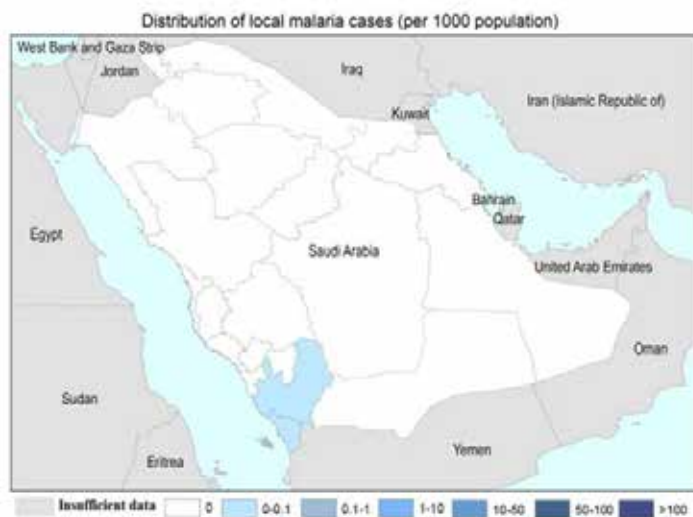
Reported malaria burden

Year	Total slides examined	Total confirmed cases	P. falciparum + mixed	P. vivax + others	Total imported cases	Total local cases
2003	1 316	79	15	78	93	0
2004	1 063	47	18	54	72	0
2005	898	168	24	144	168	0
2006	1 685	198	18	180	198	0
2007		195			195	0
2008		216			216	0
2009		239			239	0
2010		440			440	0
2011	5 211	673	52	621	673	0
2012		708	66	642	708	0

2. National drug policy

Unconfirmed uncomplicated		AL
	Uncomplicated	AL
P. falciparum treatment	Treatment failure (second line)	
	Severe	AS
P. vivax treatment		CQ
Mixed infection treatment (PF+others)		
Last drug policy update (year)		2012

3. Financing malaria control



In 2012, the number of locally transmitted malaria cases decreased by 88.3% compared with 2003. During the period 2010 to 2012 the average number of reported locally transmitted cases was 60.

1. Malaria burden and risk

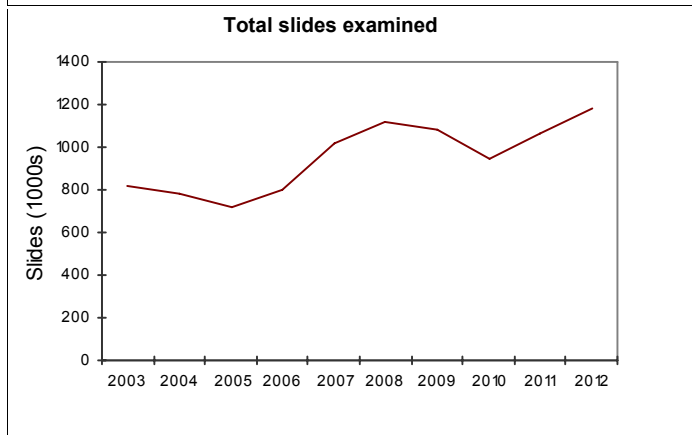
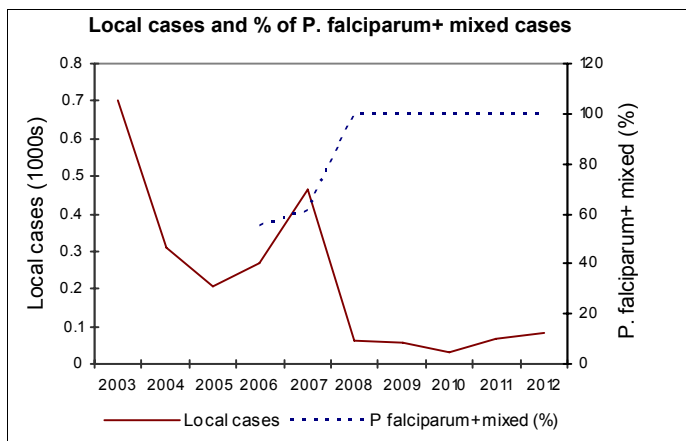
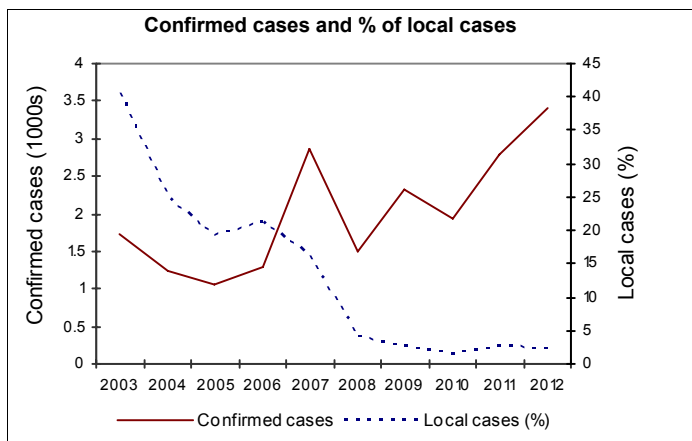
Population, endemicity and malaria burden

Population	Number	%
Total population	28 705 133	
Population under 5 years	3 174 869	11.1
Male population	15 817 209	55.1
Rural population	5 145 682	17.9

Population by malaria endemicity

No. of active foci	68	
No. of people living within active foci	2 299 447	8.0
No. of people living in malaria-free areas	26 405 686	92.0

Morbidity trends



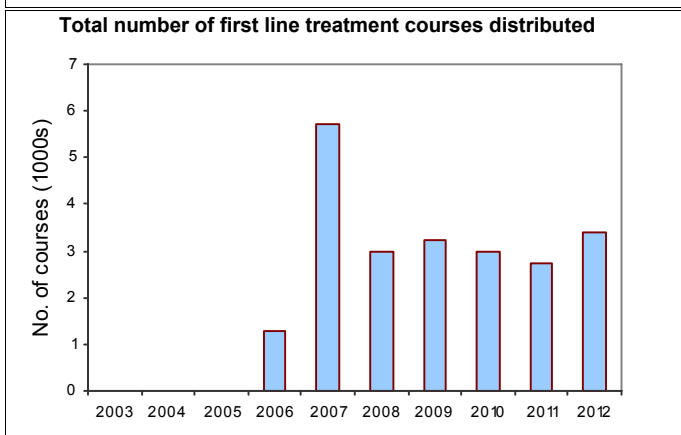
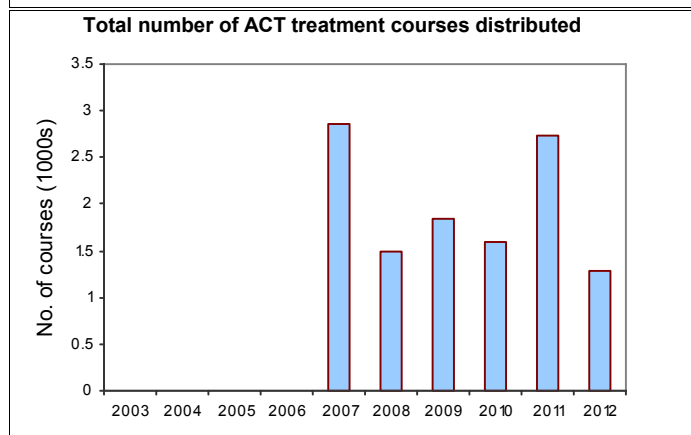
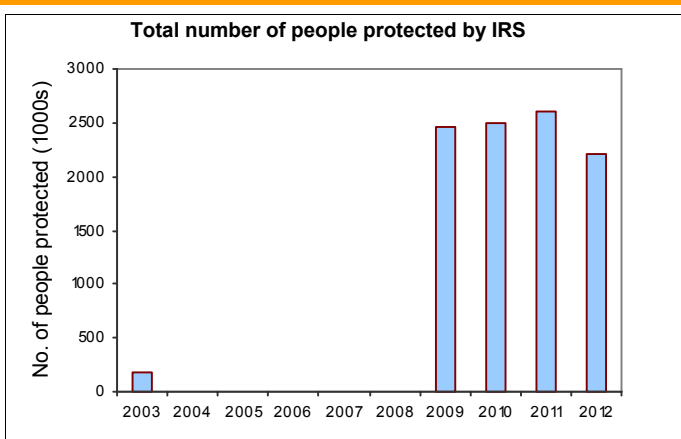
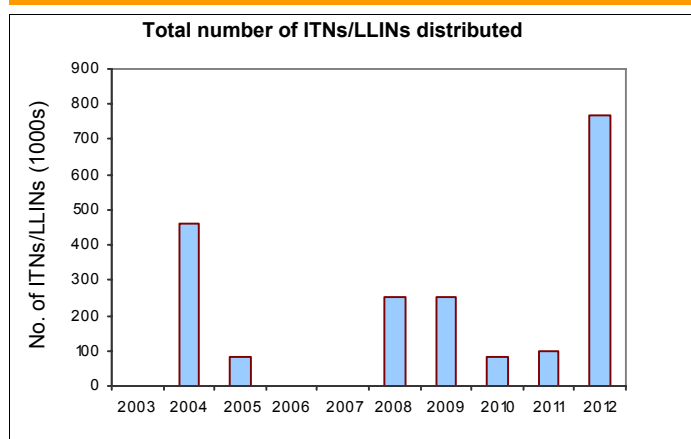
Imported cases (top 10 countries)

Country	P. falciparum	P. vivax	Mixed	Other species	Not classified	Total
Yemen	917	133	2	5	0	1 057
India	81	920	0	4	0	1 005
Pakistan	70	712	1	6	0	789
Bangladesh	25	187	1	4	0	217
Afghanistan	28	101	0	3	0	132
Sudan	22	6	0	3	0	31
Ethiopia	22	4	0	2	0	28
Nigeria	13	5	0	2	0	20
Kenya	9	1	0	1	0	11
Somalia	6	1	0	3	0	10

Reported malaria burden

Year	Total slides examined	Total confirmed cases	Imported cases			Local cases		
			Total	<i>P. falciparum</i> + mixed	<i>P. vivax</i> + others	Total	<i>P. falciparum</i> + mixed	<i>P. vivax</i> + others
2003	819 869	1 724	1 024	982	42	700	252	448
2004	780 392	1 232	924			308		
2005	715 878	1 059	852			204		
2006	804 087	1 278	1 008	837	171	270	149	121
2007	1 015 781	2 864	2 397	2 062	335	467	287	180
2008	1 114 841	1 491	1 430	772	658	61	61	0
2009	1 078 745	2 333	2 275	1 591	684	58	58	0
2010	944 723	1 941	1 912	865	1 047	29	29	0
2011	1 062 827	2 788	2 719	981	1 738	69	69	0
2012	1 186 179	3 406	3 324	1 201	2 123	82	82	0

2. Malaria control interventions coverage



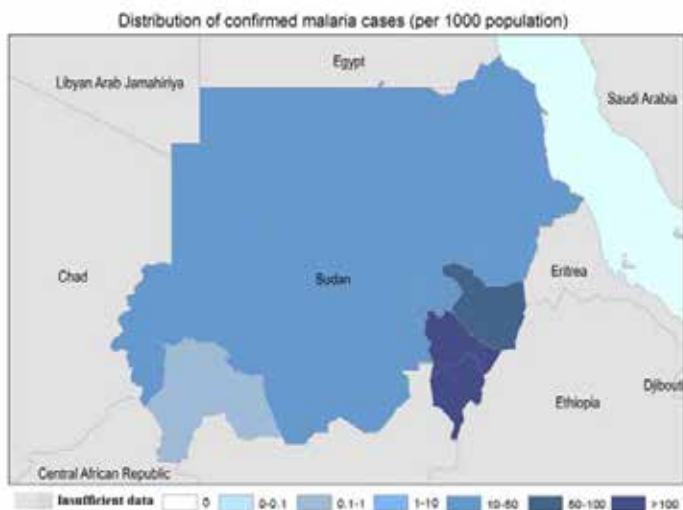
3. National drug policy

Unconfirmed uncomplicated

<i>P. falciparum</i> treatment	Uncomplicated	AS+SP
	Treatment failure (second line)	AL
<i>P. vivax</i> treatment	Severe	AS;AM;QN
		CQ+PQ(14d)
Mixed infection treatment (PF+others)		AS+SP
Last drug policy update (year)		2012

4. Financing malaria control

Government budget	Budget (US\$)	External contribution	Budget (US\$)
Government budget for malaria	29 440 000	World Health Organization	99 000
Government expenditure for malaria	29 000 000		



Sudan accounts for 24.9% of the population at high risk of malaria in the Eastern Mediterranean Region and 42.5% of the confirmed cases. 32.8% of households in targeted areas have at least one ITN for every two household members (2012). The total reported number of available and functional LLINs in the country is 3692659.

1. Malaria burden and risk

Population, endemicity and malaria burden

Population	Number	%
Total population	34 559 630	
Population under 5 years	4 736 081	13.7
Male population	17 385 153	50.3
Rural population	18 930 383	54.8

Population by malaria endemicity

High transmission (≥ 1 cases per 1000 population)	30 032 318	86.9
Low transmission (< 1 cases per 1000 population)	4 527 312	13.1
Malaria-free (0 cases)	0	0.0

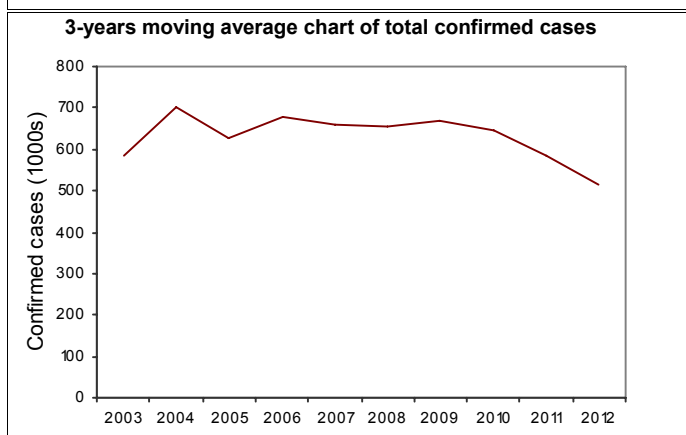
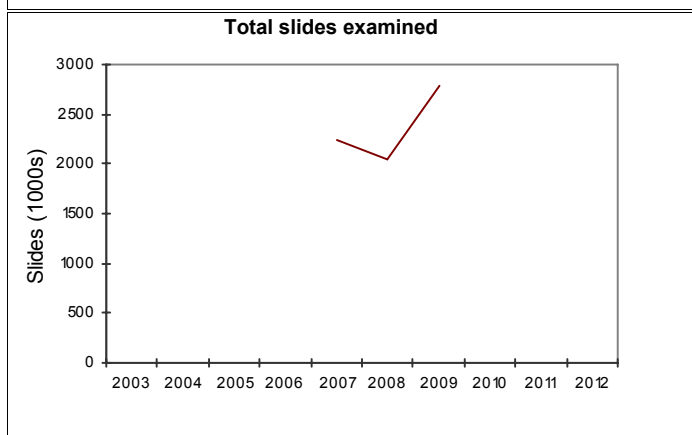
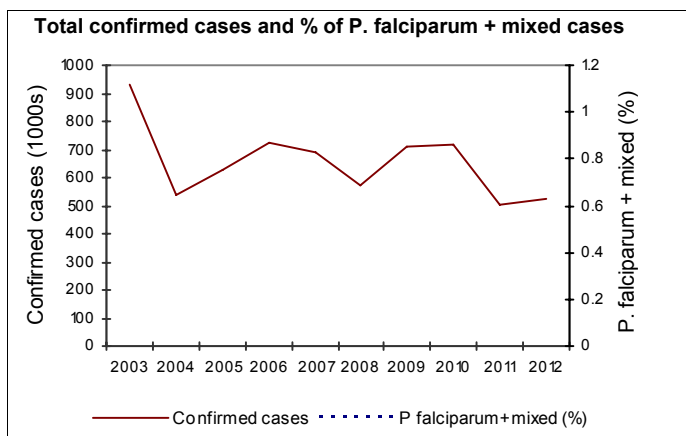
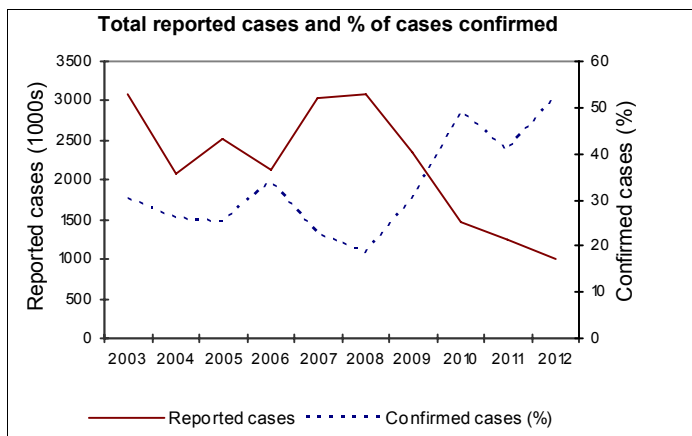
Parasite profile

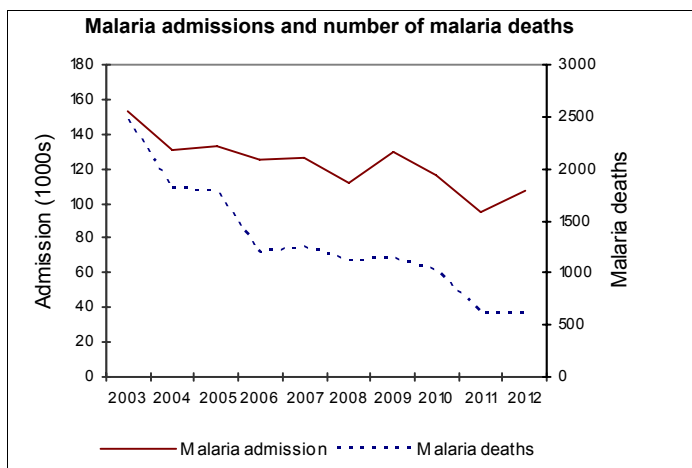
P. falciparum > *P. vivax*

Vector profile

- An. arabiensis*
- An. funestus*
- An. gambiae*
- An. nili*
- An. pharoensis*

Morbidity and mortality trends





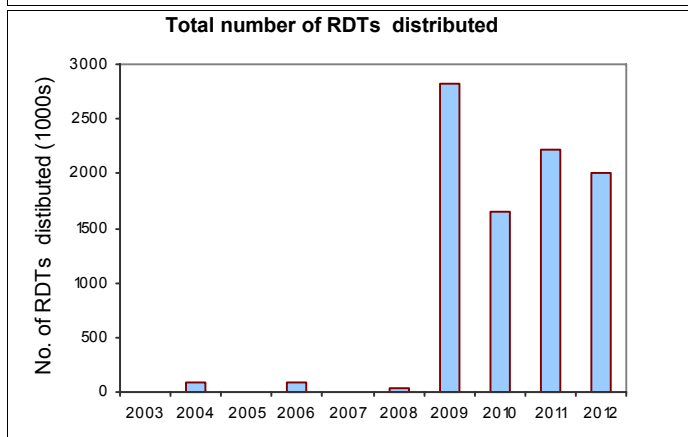
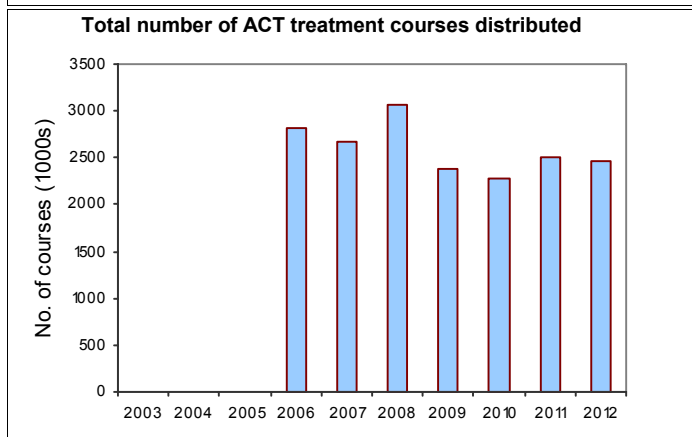
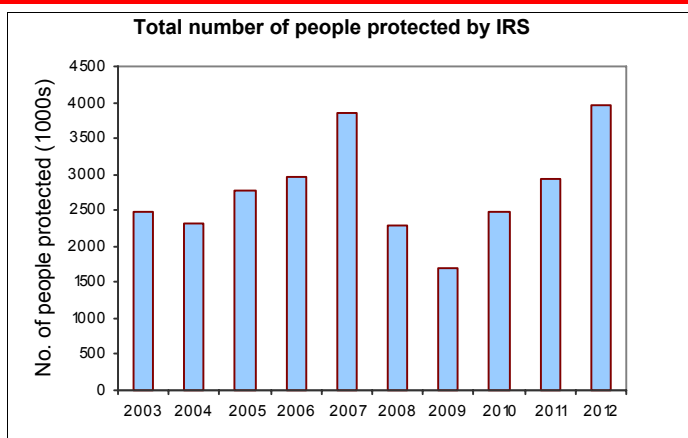
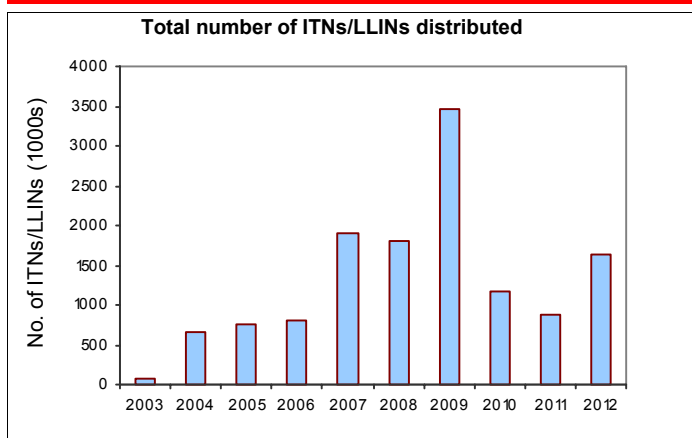
Malaria admissions and deaths

Year	Malaria admissions		Malaria deaths	
	All ages	Under 5 years	All ages	Under 5 years
2003	152 686	45 736	2 479	863
2004	130 585	38 495	1 814	749
2005	132 617	41 725	1 789	570
2006	125 550	39 615	1 193	565
2007	126 480	38 547	1 254	446
2008	111 934	40 304	1 125	359
2009	130 188	48 414	1 142	449
2010	116 736	42 394	1 023	311
2011	95 271	30 197	612	169
2012	107 029	37 684	618	209

Reported malaria burden

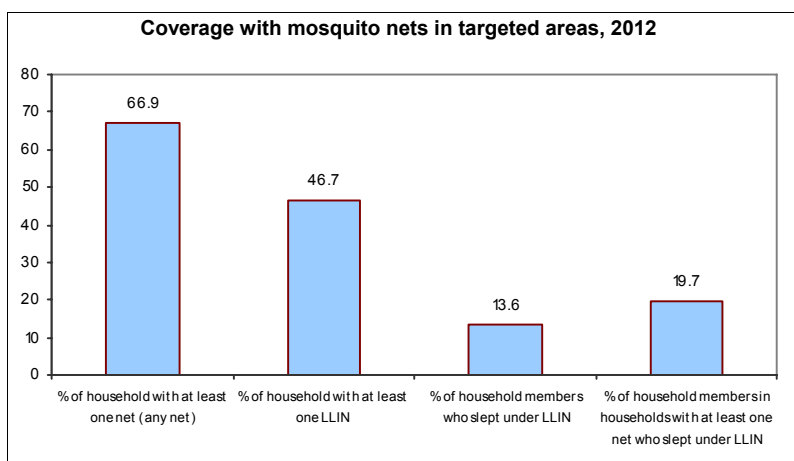
Year	Total reported cases	Confirmed cases			Number of tests			P. falciparum + mixed	P. vivax + others
		Total	Microscopy	RDTs	Total	Microscopy	RDTs		
2003	3 084 320	933 267	933 267						
2004	2 083 711	537 899	537 899						
2005	2 515 693	628 417	628 417						
2006	2 117 514	721 233	721 233						
2007	3 040 181	686 908	686 908	2 243 981	2 243 981				
2008	3 073 996	569 296	569 296	2 050 354	2 050 354				
2009	2 361 188	711 462	711 462	2 791 156	2 791 156				
2010	1 465 496	720 557	625 365	95 192	1 653 300	1 653 300			
2011	1 246 833	506 806	506 806						
2012	1 001 571	526 931	526 931		2 000 700	2 000 700			

2. Malaria control interventions coverage



Reported malaria control interventions

Year	Total number of ITNs/LLINs distributed	Total number of ACT treatment courses distributed	Total number of people protected by IRS	Total number of RDTs distributed
2003	76 500		2 473 973	
2004	665 400		2 327 272	90 000
2005	752 900		2 776 555	
2006	796 199	2 814 000	2 977 432	90 000
2007	1 910 000	2 677 199	3 846 738	6 100
2008	1 806 540	3 073 996	2 281 687	34 000
2009	3 470 931	2 379 910	1 685 439	2 817 425
2010	1 166 240	2 285 901	2 480 360	1 653 300
2011	882 901	2 512 852	2 947 155	2 222 380
2012	1 643 518	2 462 470	3 967 730	2 000 700

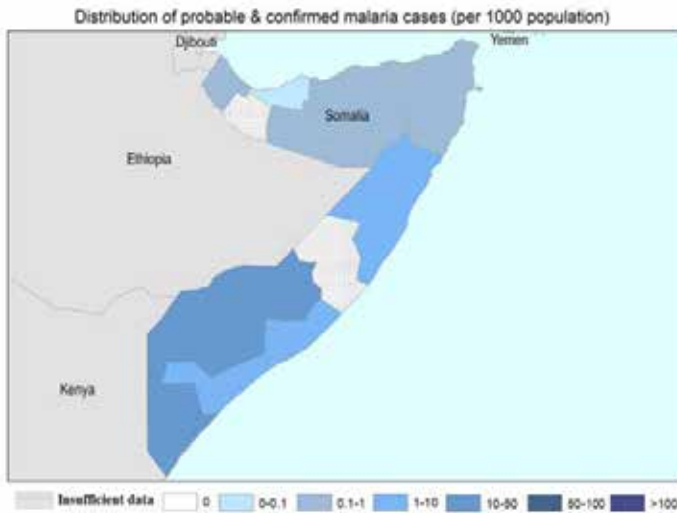


3. National drug policy

Unconfirmed uncomplicated	AS+SP	
P. falciparum treatment	Uncomplicated	AS+SP
	Treatment failure (second line)	AL
	Severe	QN;AM
P. vivax treatment	AL	
Mixed infection treatment (PF+others)	AL	
Last drug policy update (year)	2011	

4. Financing malaria control

Government budget	Budget (US\$)	External contribution	Budget (US\$)
Government budget for malaria	40 783 892	Global Fund	38 398 132
Government expenditure for malaria	26 709 969	World Health Organization	641 921
		UNICEF	494 000
		Other (nongovernmental organizations, foundations, etc)	1 680 907
Expenditure breakdown	Expenditure (US\$)		
Human resources & technical assistance	11 415 542		
Training	1 299 074		
ITNs/LLINs	28 889 074		
Insecticide & spraying materials	1 954 232		
Diagnostics	232 827		
Anti-malarial medicines	5 774 306		
Procurement & supply management	5 056 873		
Infrastructure & other equipments	1 859 332		
Communication and advocacy	399 269		
Planning, administration and overheads	995 543		
Monitoring and evaluation	1 338 899		
Others	8 709 958		



Somalia accounts for 5.7% of the population at high risk of malaria in the Eastern Mediterranean Region and 1.5% of the confirmed cases. The total reported number of available and functional LLINs in the country is 796698.

1. Malaria burden and risk

Population, endemicity and malaria burden

Population	Number	%
Total population	9 797 445	
Population under 5 years	1 734 525	17.7
Male population	4 859 967	49.6
Rural population	6 128 498	62.6

Population by malaria endemicity

High transmission (≥ 1 cases per 1000 population)	6 824 553	69.7
Low transmission (< 1 cases per 1000 population)	2 972 892	30.3
Malaria-free (0 cases)	0	0.0

Parasite profile

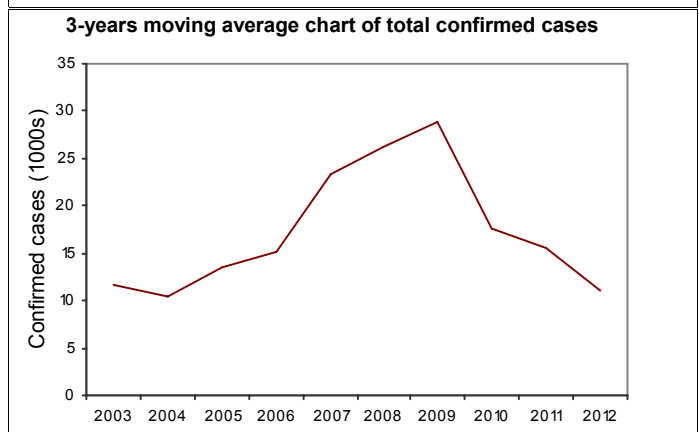
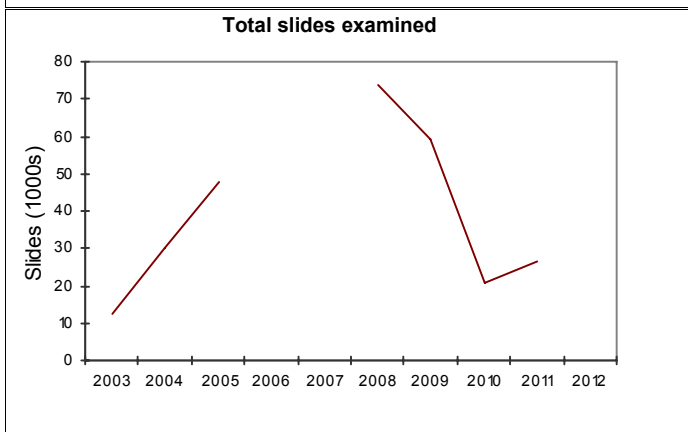
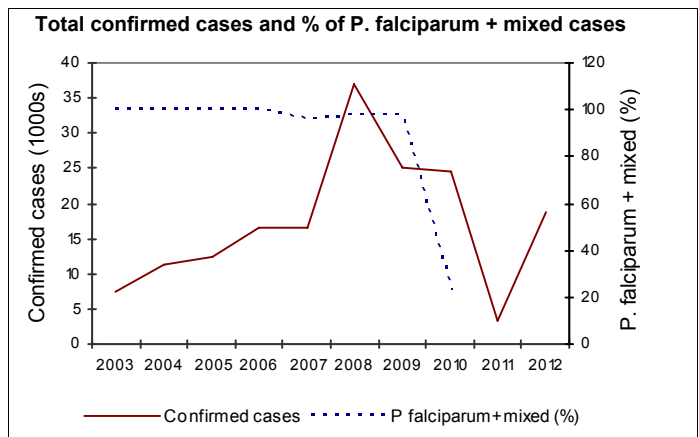
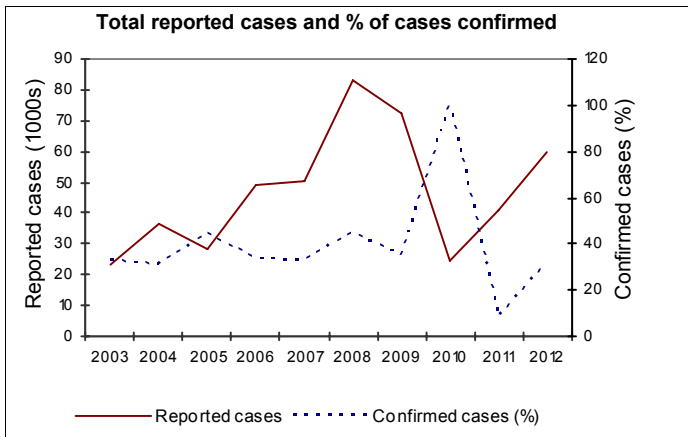
P. falciparum > *P. vivax*

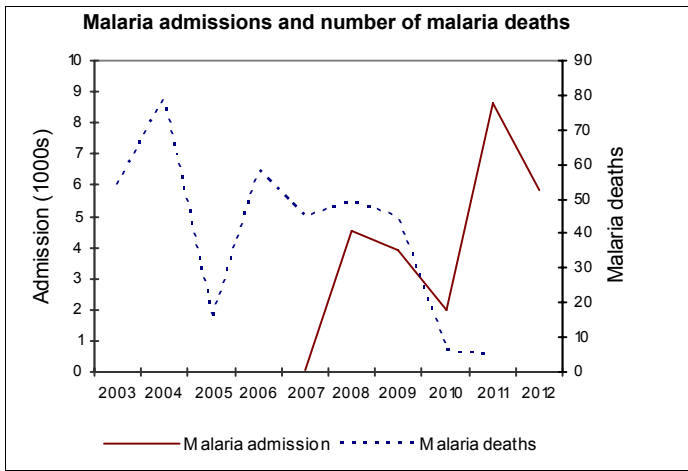
Vector profile

An. arabiensis

An. funestus

Morbidity and mortality trends





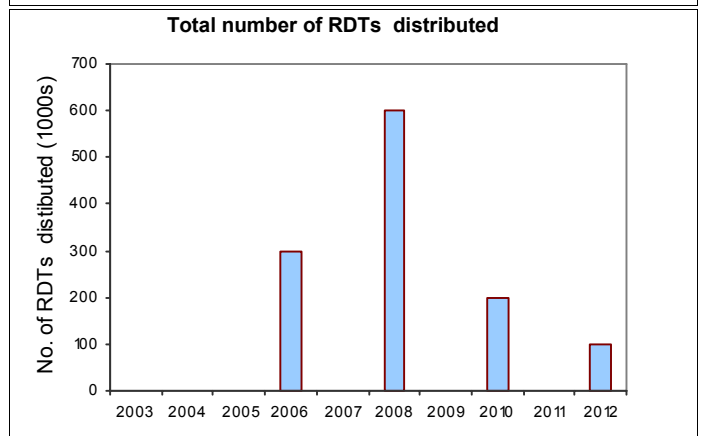
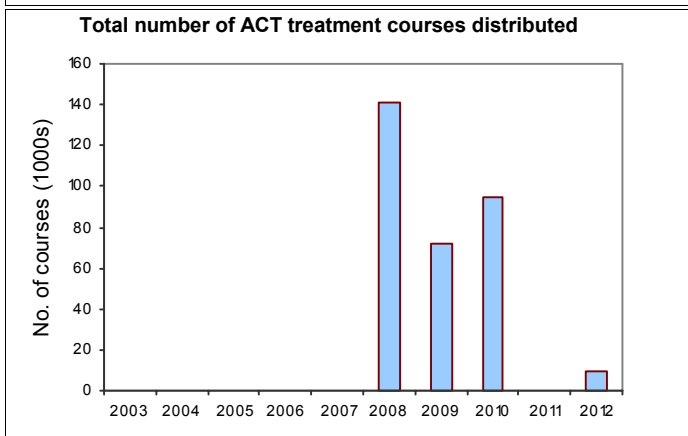
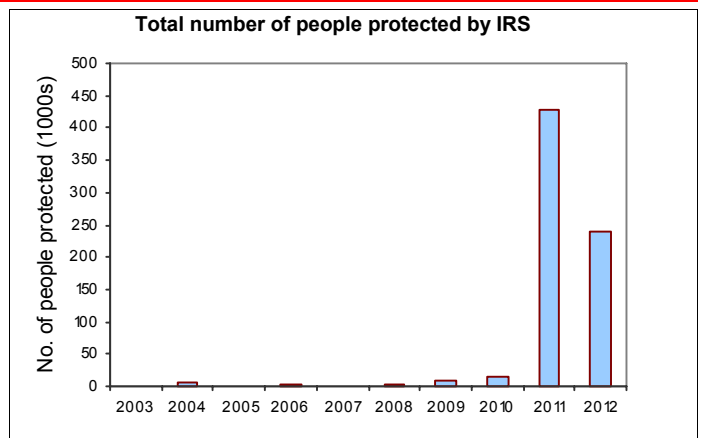
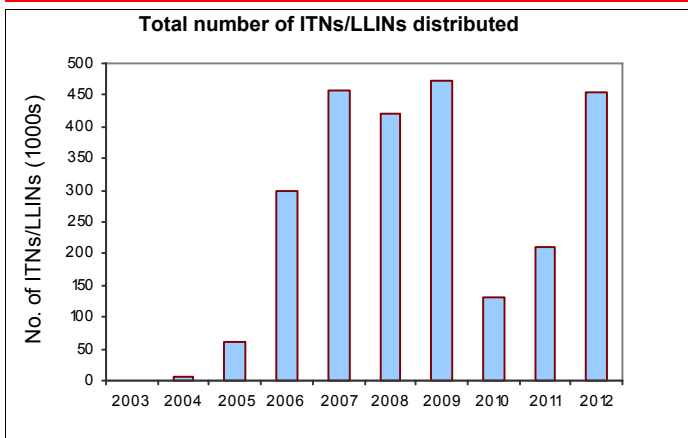
Malaria admissions and deaths

Year	Malaria admissions		Malaria deaths	
	All ages	Under 5 years	All ages	Under 5 years
2003			54	
2004			79	
2005			15	
2006			58	
2007	80		45	
2008	4 508	3 847	49	
2009	3 938	1 665	45	
2010	1 964	1 258	6	
2011	8 613	3 221	5	
2012	5 852	2 684		

Reported malaria burden

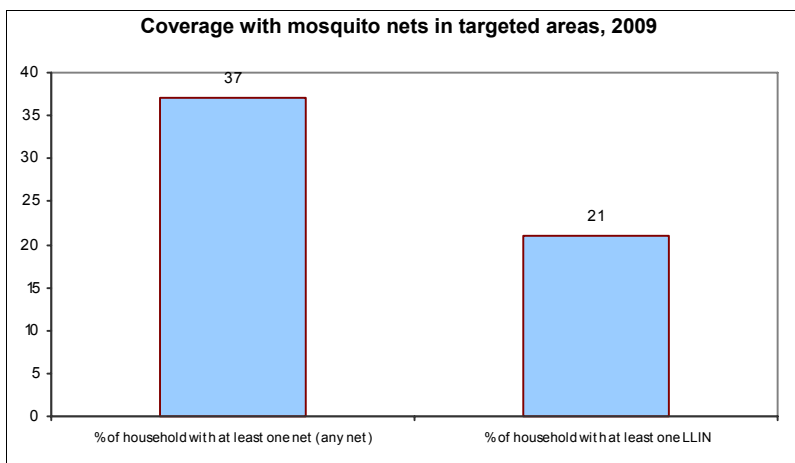
Year	Total reported cases	Confirmed cases		Number of tests			P. falciparum + mixed	P. vivax + others
		Total	Microscopy	RDTs	Total	Microscopy		
2003	23 349	7 571	7 571		12 578	12 578	7 571	0
2004	36 732	11 436	11 436		30 127	30 127	11 436	0
2005	28 404	12 516	12 516		47 882	47 882	12 516	0
2006	49 092	16 430	16 430				16 430	0
2007	50 444	16 675	16 675				16 058	617
2008	82 980	36 905	36 905		73 985	73 985	36 167	738
2009	72 362	25 202	25 202		59 181	59 181	24 698	504
2010	24 553	24 553	5 629	18 924	220 698	20 593	5 629	0
2011	41 167	3 351	1 627	1 724	61 587	26 351	35 236	
2012	59 709	18 842	18 842					

2. Malaria control interventions coverage



Reported malaria control interventions

Year	Total number of ITNs/LLINs distributed	Total number of ACT treatment courses distributed	Total number of people protected by IRS	Total number of RDTs distributed
2003				
2004	6 700		6 702	
2005	60 000			
2006	300 000		2 898	300 000
2007	456 000		720	
2008	420 122	141 379	3 720	602 600
2009	473 081	72 000	9 100	
2010	131 467	95 000	16 261	200 000
2011	210 231		429 514	
2012	455 000	9 268	240 558	100 355



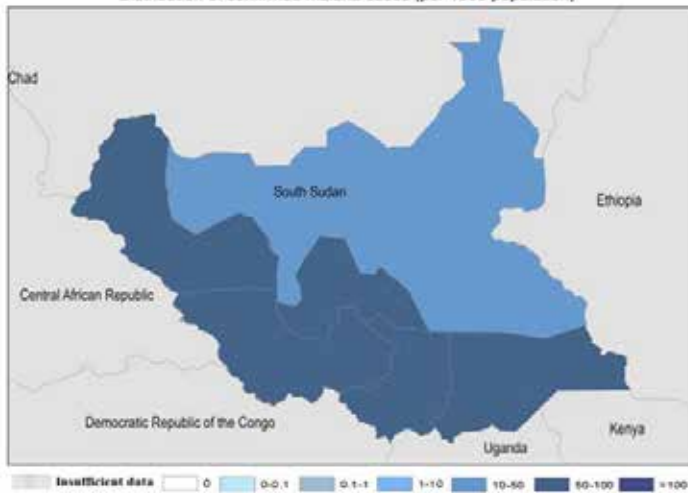
3. National drug policy

Unconfirmed uncomplicated	AS+SP	
P. falciparum treatment	Uncomplicated	AS+SP
	Treatment failure (second line)	AL
	Severe	AS, QN
P. vivax treatment	CQ+PQ	
Mixed infection treatment (PF+others)	AL	
Last drug policy update (year)	2010	

4. Financing malaria control

Government budget	Budget (US\$)	External contribution	Budget (US\$)
Government budget for malaria	63 250	Global Fund	11 904 217
Government expenditure for malaria	63 250	World Health Organization	103 400
		Other bilaterals	200 000
Expenditure breakdown	Expenditure (US\$)		
Human resources & technical assistance	1 059 687		
Training	115 836		
ITNs/LLINs	8 739 175		
Anti-malarial medicines	207 613		
Procurement & supply management	430 382		
Infrastructure & other equipments	260 524		
Communication and advocacy	52 535		
Planning, administration and overheads	210 365		
Monitoring and evaluation	297 091		
Others	834 408		

Distribution of confirmed malaria cases (per 1000 population)



South Sudan accounts for 9.7% of the population at high risk of malaria in the Eastern Mediterranean Region and 18.2% of the confirmed cases. 24.6% of households in targeted areas have at least one ITN for every two household members (2009). The total reported number of available and functional LLINs in the country is 3625712.

1. Malaria burden and risk

Population, endemicity and malaria burden

Population	Number	%
Total population	11 672 551	
Population under 5 years	1 599 616	13.7
Male population	5 871 853	50.3
Rural population	6 393 757	54.8

Population by malaria endemicity

High transmission (≥ 1 cases per 1000 population)	11 672 551	100.0
Low transmission (< 1 cases per 1000 population)	0	0.0
Malaria-free (0 cases)	0	0.0

Parasite profile

P. falciparum > *P. vivax*

Vector profile

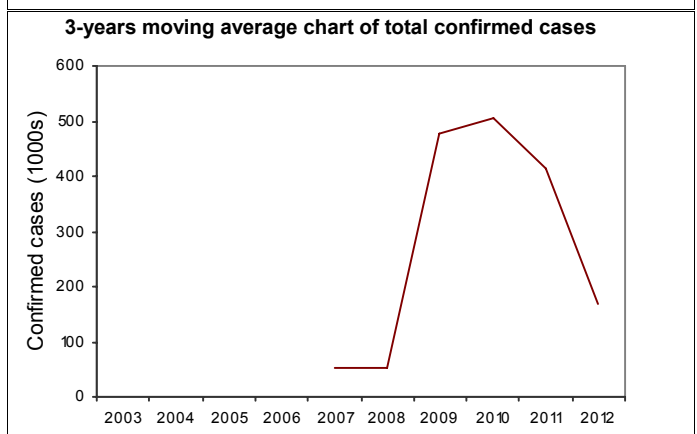
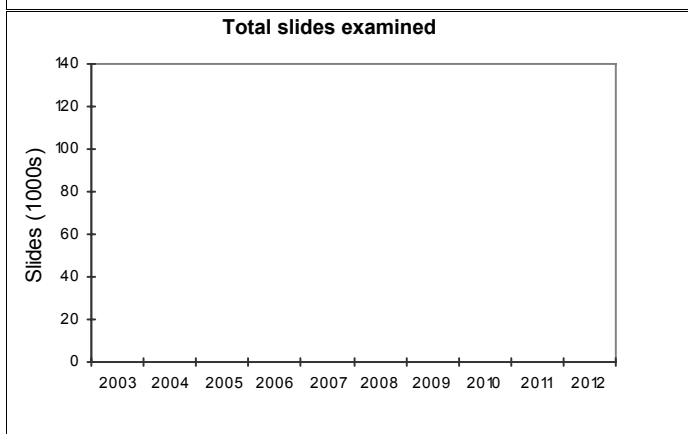
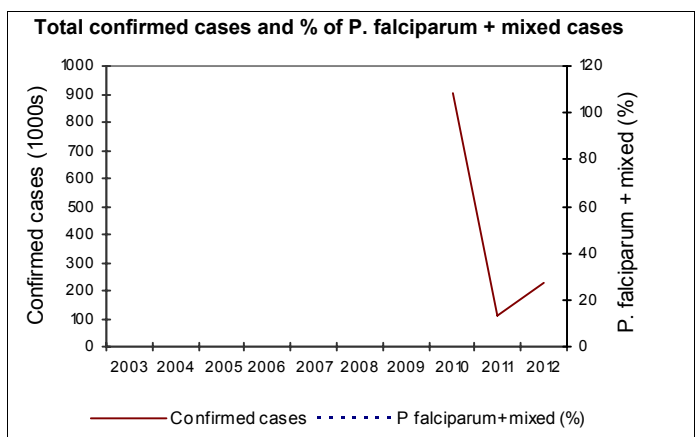
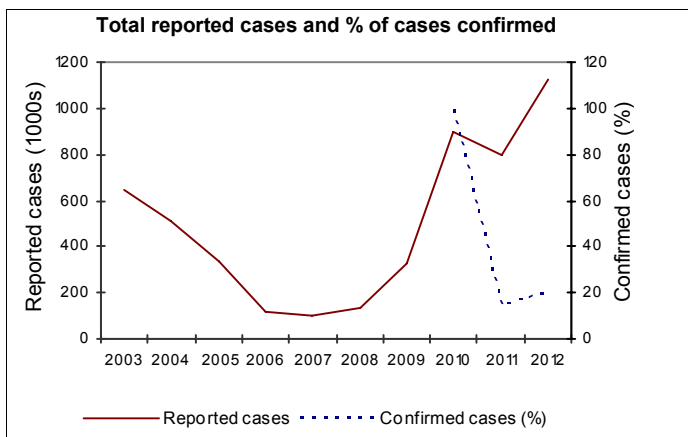
An. gambiae

An. arabiensis

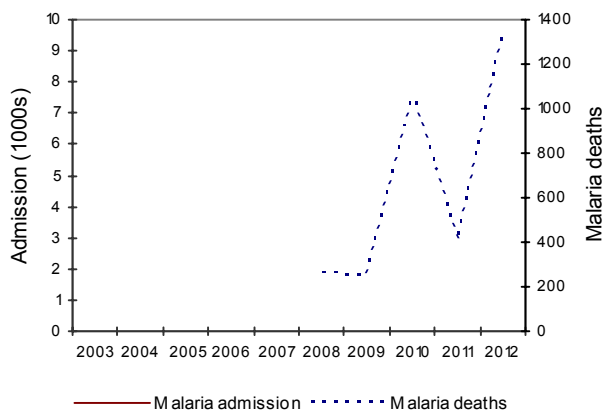
An. funestus

An. nili

Morbidity and mortality trends



Malaria admissions and number of malaria deaths



Malaria admissions and deaths

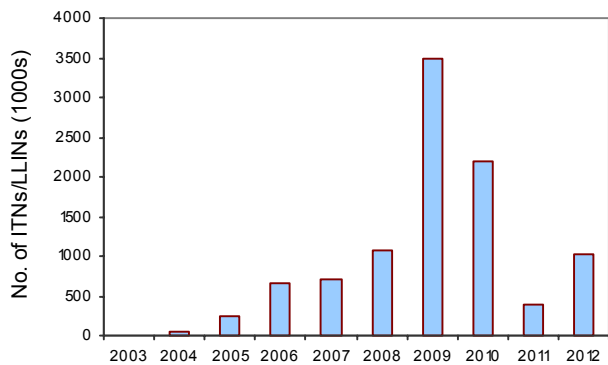
Year	Malaria admissions		Malaria deaths	
	All ages	Under 5 years	All ages	Under 5 years
2003				
2004				
2005				
2006				
2007				
2008	8 700	5 118	263	
2009			254	187
2010			1 053	712
2011			406	297
2012			1 321	985

Reported malaria burden

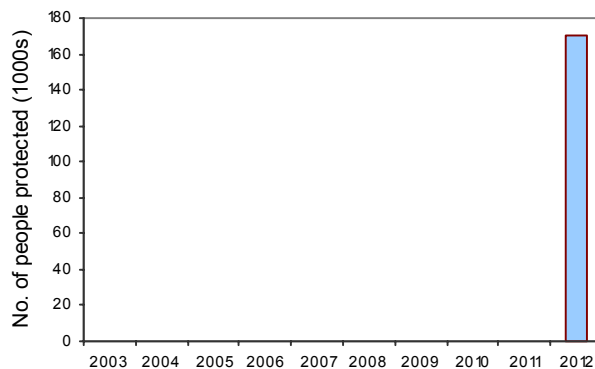
Year	Total reported cases	Confirmed cases			Number of tests			P. falciparum + mixed	P. vivax + others
		Total	Microscopy	RDTs	Total	Microscopy	RDTs		
2003	646 673								
2004	515 958								
2005	337 582								
2006	116 473								
2007	101 008								
2008	136 492	52 011	52 011		116 555	116 555			
2009	325 634								
2010	900 283	900 283	900 283						
2011	795 784	112 024	112 024				112 024		
2012	1 125 039	225 371	225 371						

2. Malaria control interventions coverage

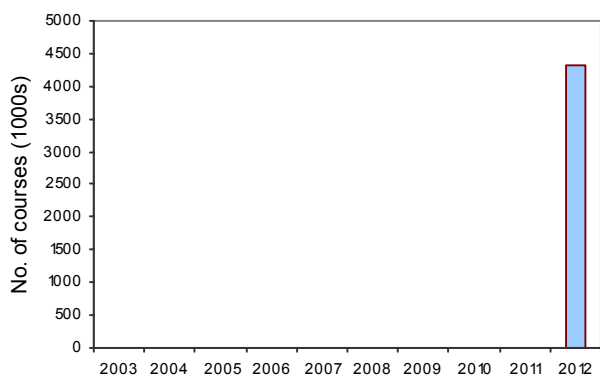
Total number of ITNs/LLINs distributed



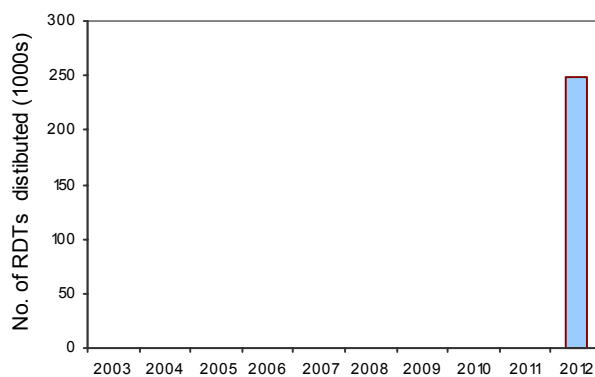
Total number of people protected by IRS



Total number of ACT treatment courses distributed

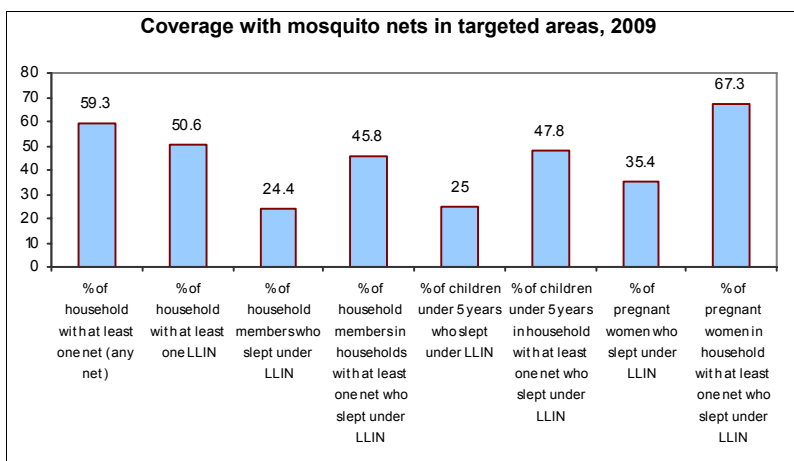


Total number of RDTs distributed



Reported malaria control interventions

Year	Total number of ITNs/LLINs distributed	Total number of ACT treatment courses distributed	Total number of people protected by IRS	Total number of RDTs distributed
2003				
2004	45 000			
2005	253 000			
2006	650 000			
2007	704 000			
2008	1 064 066			
2009	3 479 013			
2010	2 203 040			
2011	386 563			
2012	1 036 109	4 333 150	170 440	247 977

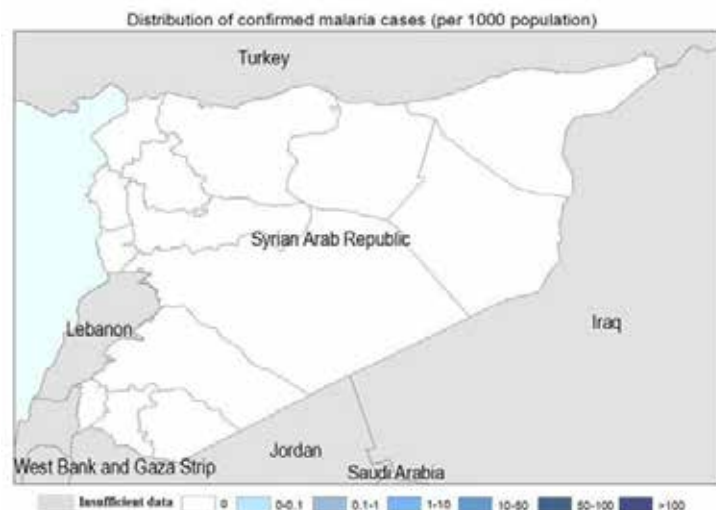


3. National drug policy

Unconfirmed uncomplicated	AS+AQ	
P. falciparum treatment	Uncomplicated	AS+AQ;DHP (can be an option in private sector)
	Treatment failure (second line)	AL
	Severe	AS;AM;QN
P. vivax treatment	AS+AQ (+PQ although not implemented)	
Mixed infection treatment (PF+others)		
Last drug policy update (year)	2012	

4. Financing malaria control

Government budget	Budget (US\$)	External contribution	Budget (US\$)
Government budget for malaria		Global Fund	38 496 269
Government expenditure for malaria		World Health Organization	2 934 000
		UNICEF	842 791
		USAID / PMI	9 600 000
		Other bilaterals	1 300 000
Expenditure breakdown	Expenditure (US\$)		
Human resources & technical assistance	5 327 813		
Training	1 593 627		
ITNs/LLINs	4 875 107		
Insecticide & spraying materials	7 500		
Diagnostics	1 373 000		
Anti-malarial medicines	7 316 498		
Procurement & supply management	2 083 843		
Infrastructure & other equipments	1 038 548		
Communication and advocacy	450 992		
Planning, administration and overheads	2 114 982		
Monitoring and evaluation	1 417 752		
Others	998 168		



Syrian Arab Republic is free from local malaria transmission and has 0.5% of reported cases of the malaria-free countries. The last local case was in 2004.

1. Malaria burden and risk

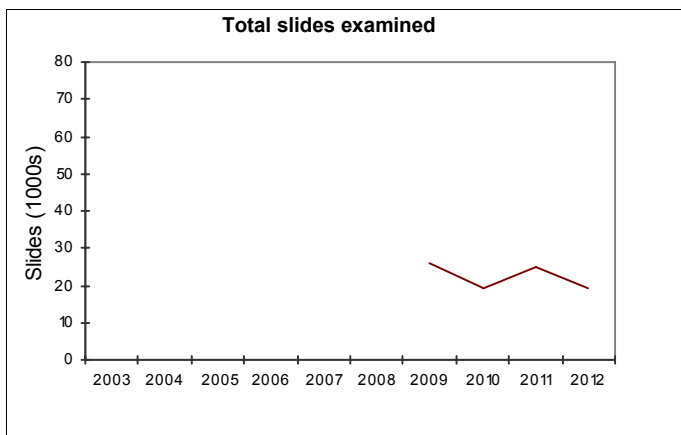
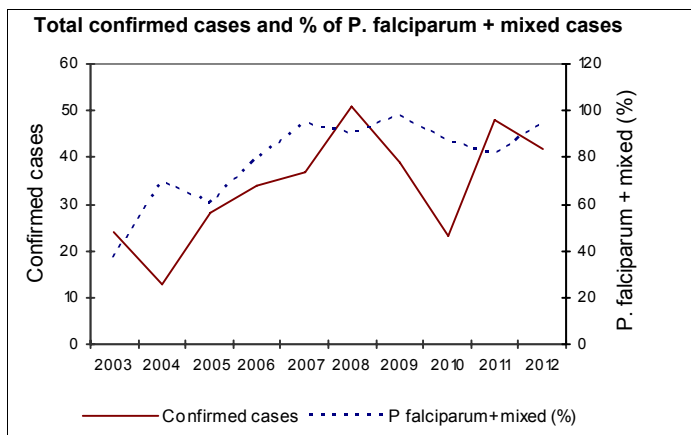
Population

Population	Number	%
Total population	21 117 690	
Population under 5 years	2 399 922	11.4
Male population	10 681 835	50.6
Rural population	8 344 616	39.5

Vector profile

- An. sacharovi*
- An. claviger*
- An. superpictus*
- An. sergentii*
- An. hyrcanus*
- An. multicolor*

Morbidity trends



Reported malaria burden

Year	Total slides examined	Total confirmed cases	<i>P. falciparum</i> + mixed	<i>P. vivax</i> + others	Total imported cases	Total local cases
2003		24	13	9	22	2
2004		13	9	3	12	1
2005		28	17	0	28	0
2006		34	27	0	34	0
2007	68 000	37	35	0	37	0
2008		51	46	0	51	0
2009	25 751	39	38	1	39	0
2010	19 151	23	20	3	23	0
2011	25 109	48	39	9	48	0
2012	19 136	42	40	2	42	0

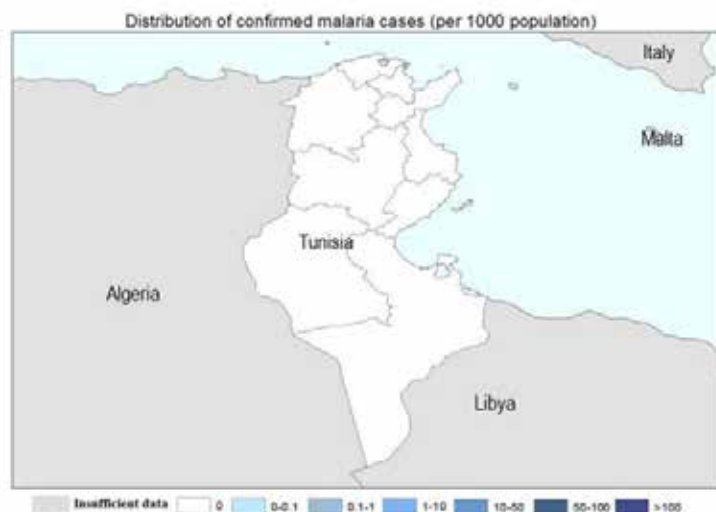
Imported cases (top 10 countries)

Country	<i>P. falciparum</i>	<i>P. vivax</i>	Mixed	Other species	Not classified	Total
Guinea		13	0	0	0	13
Congo		4	0	1	0	5
Sudan		4	1	0	0	5
Yemen		4	0	0	0	4
Côte d'Ivoire		3	0	0	0	3
Ghana		3	0	0	0	3
India		3	0	0	0	3
Nigeria		2	0	0	0	2
Gabon		1	0	0	0	1
Guatemala		1	0	0	0	1
Liberia		1	0	0	0	1
Togo		1	0	0	0	1

2. National drug policy

Unconfirmed uncomplicated		
	Uncomplicated	AL+PQ
P. falciparum treatment	Treatment failure (second line)	QN+D
	Severe	AS+QN
P. vivax treatment		CQ+PQ
Mixed infection treatment (PF+others)		AL+PQ
Last drug policy update (year)		2010

3. Financing malaria control



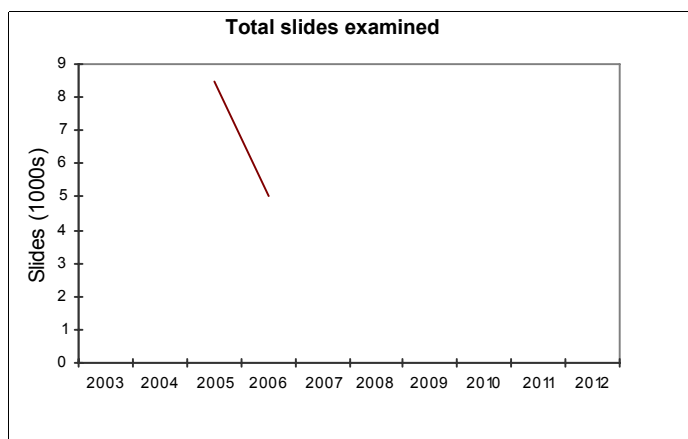
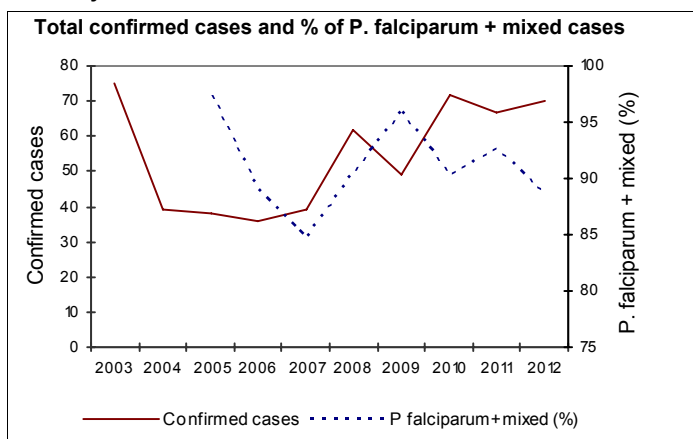
Tunisia is free from local malaria transmission and has 0.8% of reported cases of the malaria-free countries. The last local case was in 1979.

1. Malaria burden and risk

Population

Population	Number	%
Total population	10 704 948	
Population under 5 years	889 118	8.3
Male population	5 348 470	50.0
Rural population	3 532 633	33.0

Morbidity trends



Reported malaria burden

Year	Total slides examined	Total confirmed cases	P. falciparum + mixed	P. vivax + others	Total imported cases	Total local cases
2003		75			75	0
2004		39			39	0
2005	8 467	38	37	1	38	0
2006	5 047	36	32	4	36	0
2007		39	33	6	39	0
2008		62	56	6	62	0
2009		49	47	2	49	0
2010		72	65	7	72	0
2011		67	62	5	67	0
2012		70	62	8	70	0

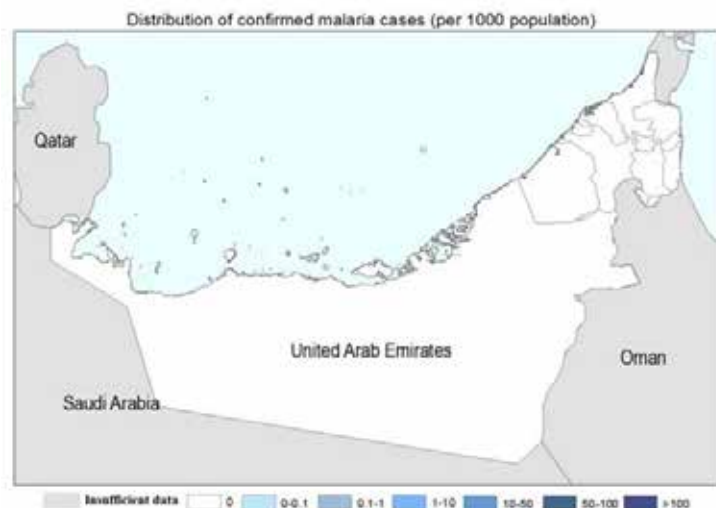
Imported cases (top 10 countries)

Country	P. falciparum	P. vivax	Mixed	Other species	Not classified	Total
Mauritania	7	3	0	0	0	10
Chad	6	0	0	0	0	6
Côte d'Ivoire	4	0	0	2	0	6
Mali	6	0	0	0	0	6
Burkina Faso	4	0	0	0	0	4
Cameroon	3	0	0	0	0	3
Congo	1	0	0	1	0	2
Egypt	2	0	0	0	0	2
Gabon	2	0	0	0	0	2
Niger	2	0	0	0	0	2
Senegal	2	0	0	0	0	2

2. National drug policy

Unconfirmed uncomplicated		
	Uncomplicated	AL
P. falciparum treatment	Treatment failure (second line)	QN
	Severe	QN
P. vivax treatment		CQ+PQ
Mixed infection treatment (PF+others)		
Last drug policy update (year)		2007

3. Financing malaria control



United Arab Emirates is free from local malaria transmission and has 56.3% of reported cases of the malaria-free countries. The last local case was in 1997. The country was certified as malaria-free in 2007.

1. Malaria burden and risk

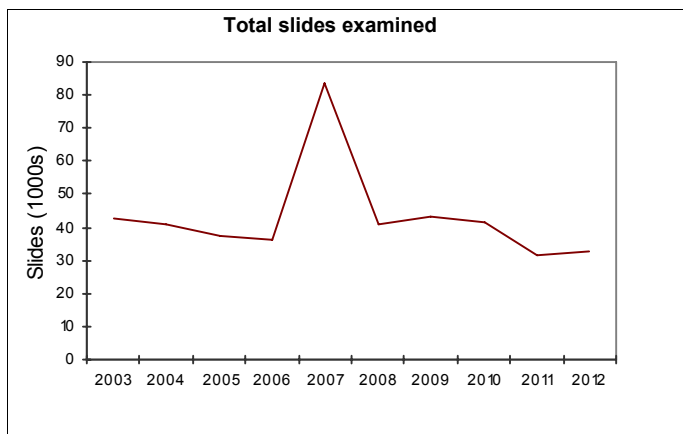
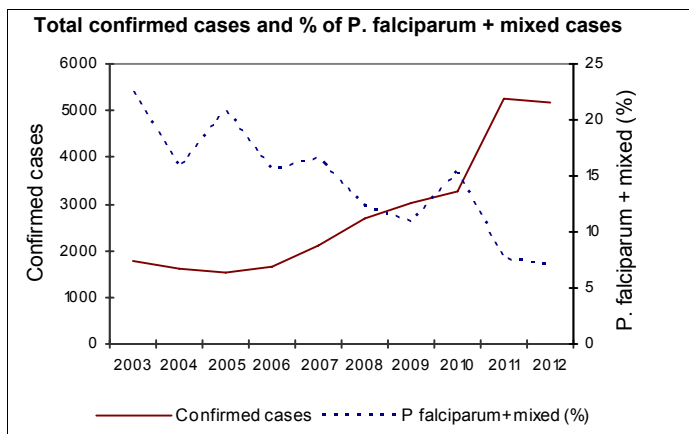
Population

Population	Number	%
Total population	8 105 873	
Population under 5 years	471 602	5.8
Male population	5 619 041	69.3
Rural population	4 141 300	51.1

Vector profile

An. culicifacies
An. stephensi

Morbidity trends



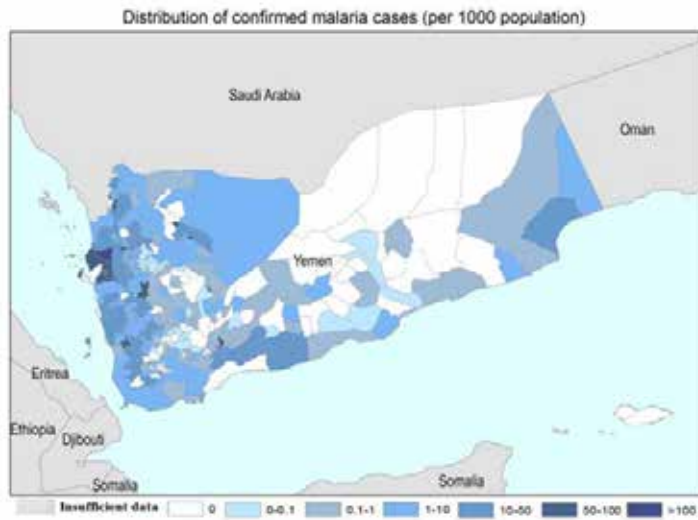
Reported malaria burden

Year	Total slides examined	Total confirmed cases	P. falciparum + mixed	P. vivax + others	Total imported cases	Total local cases
2003	42 601	1 796	400	1 381	1 796	0
2004	41 007	1 612	252	1 360	1 612	0
2005	37 607	1 544	323	1 221	1 544	0
2006	36 394	1 663	257	1 406	1 663	0
2007	83 502	2 119	349	1 770	2 119	0
2008	40 960	2 696	329	2 367	2 696	0
2009	43 480	3 018	330	2 688	3 018	0
2010	41 764	3 264	501	2 763	3 264	0
2011	31 687	5 242	399	4 843	5 242	0
2012	32 980	5 165	368	4 797	5 165	0

2. National drug policy

Unconfirmed uncomplicated		
	Uncomplicated	AL;MQ
P. falciparum treatment	Treatment failure (second line)	QN
	Severe	QN
P. vivax treatment		CQ+PQ
Mixed infection treatment (PF+others)		AL+PQ
Last drug policy update (year)		2006

3. Financing malaria control



Yemen accounts for 9.1% of the population at high risk of malaria in the Eastern Mediterranean Region and 8.9% of the confirmed cases. 1.8% of households in targeted areas have at least one ITN for every two household members (2009). The total reported number of available and functional LLINs in the country is 1769623.

1. Malaria burden and risk

Population, endemicity and malaria burden

Population	Number	%
Total population	25 569 263	
Population under 5 years	4 295 799	16.8
Male population	12 869 359	50.3
Rural population	17 437 470	68.2

Parasite profile

P. falciparum>*P. vivax*

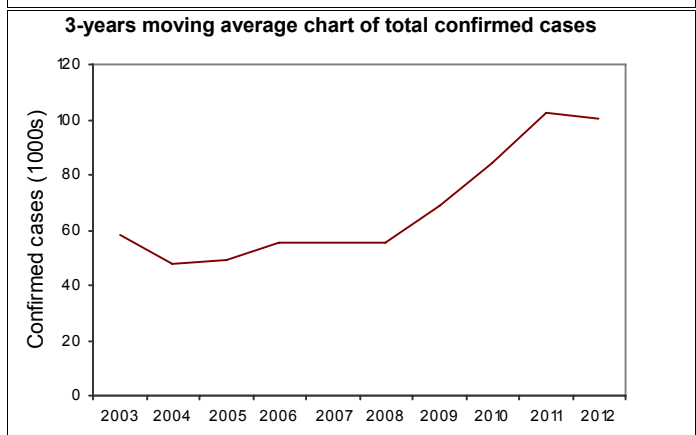
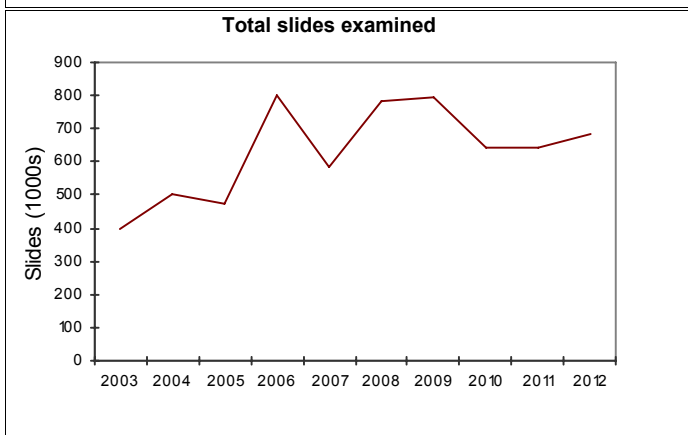
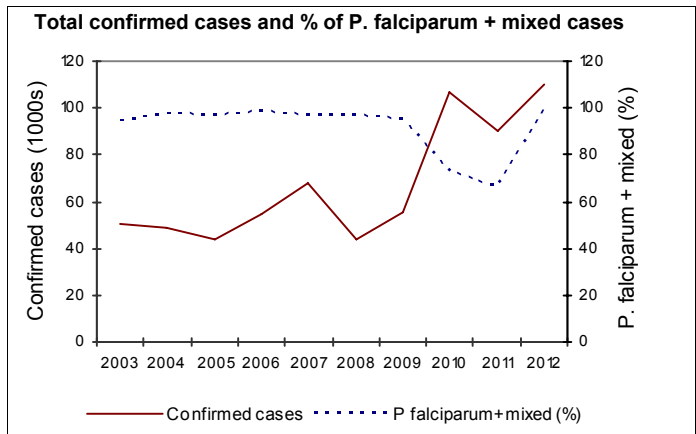
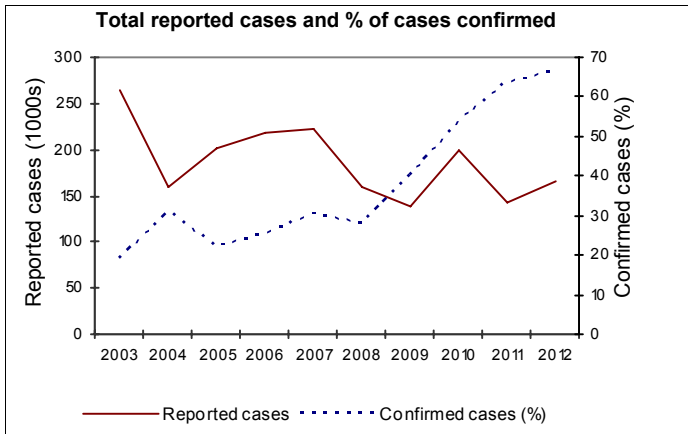
Vector profile

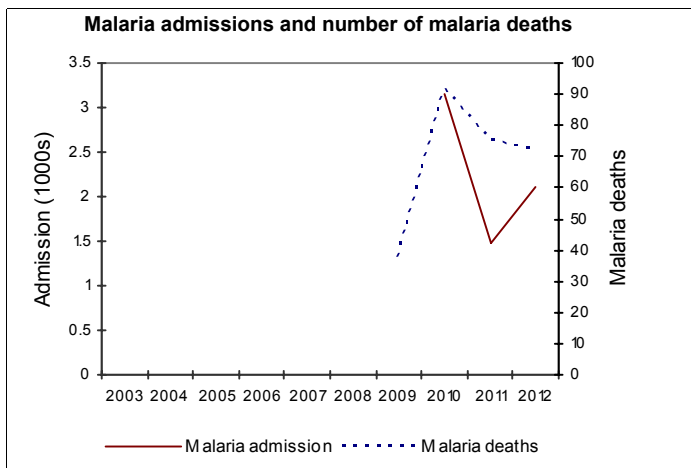
- An. arabiensis*
- An. culicifacies*
- An. sergentii*

Population by malaria endemicity

High transmission (≥ 1 cases per 1000 population)	10 944 839	42.8
Low transmission (< 1 cases per 1000 population)	6 585 612	25.8
Malaria-free (0 cases)	8 038 812	31.4

Morbidity and mortality trends





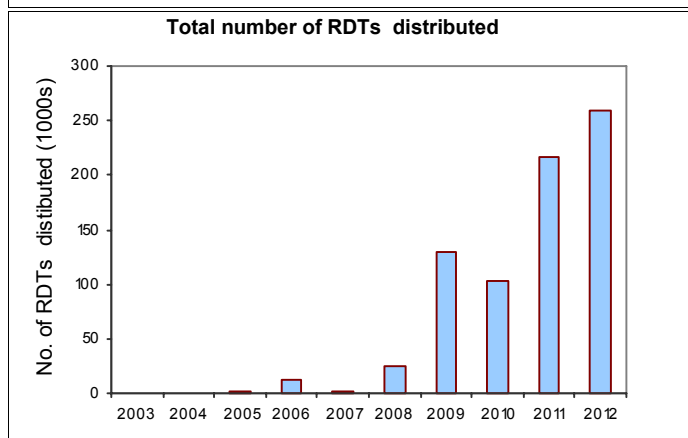
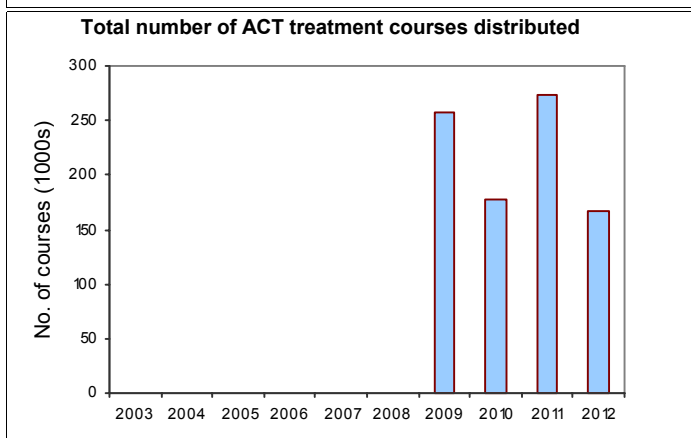
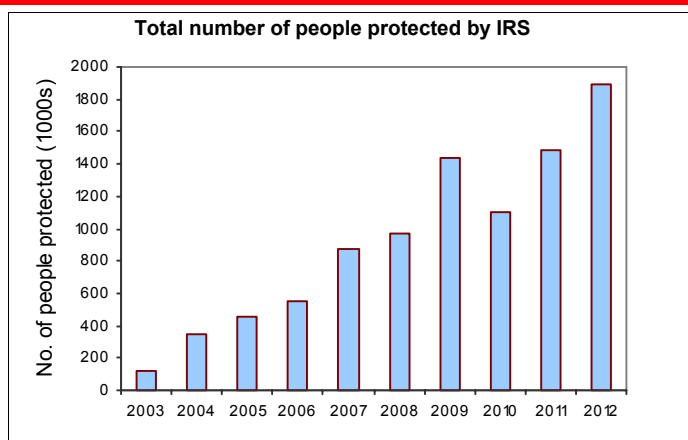
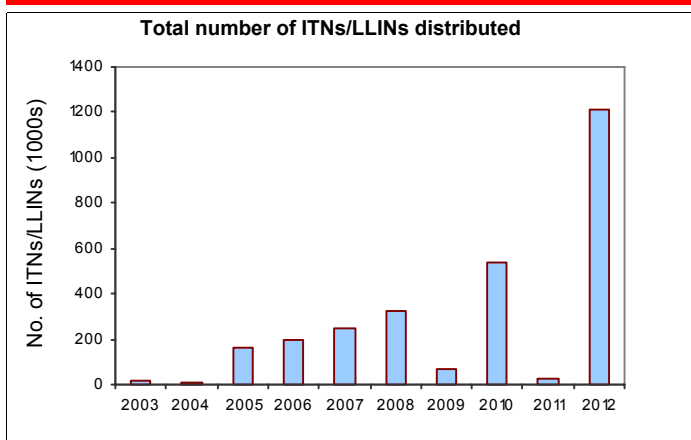
Malaria admissions and deaths

Year	Malaria admissions		Malaria deaths	
	All ages	Under 5 years	All ages	Under 5 years
2003				
2004				
2005				
2006			73	73
2007				
2008				
2009			38	
2010	3 153	888	92	33
2011	1 474	489	75	26
2012	2 106	562	72	37

Reported malaria burden

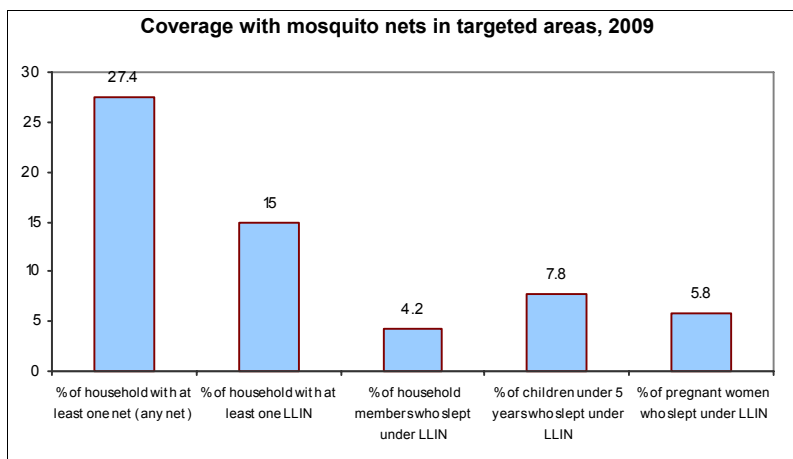
Year	Total reported cases	Confirmed cases			Number of tests			P. falciparum + mixed	P. vivax + others
		Total	Microscopy	RDTs	Total	Microscopy	RDTs		
2003	265 032	50 811	50 811		398 472	398 472		47 894	1 474
2004	158 561	48 756	48 756		501 747	501 747		47 452	1 304
2005	200 560	44 150	44 150		472 970	472 970		42 681	1 469
2006	217 270	55 000	55 000		799 747	799 747		53 971	1 029
2007	223 299	67 677	67 607	70	585 318	585 015	303	65 268	2 339
2008	158 608	44 206	43 545	661	786 333	781 318	5 015	42 796	749
2009	138 579	55 446	53 445	2 001	816 187	797 621	18 566	52 853	592
2010	198 963	106 697	78 269	28 428	742 752	645 463	97 289	77 301	968
2011	142 147	90 410	60 207	30 203	753 203	645 093	108 110	59 696	511
2012	165 678	109 908	68 849	41 059	835 624	685 406	150 218	109 506	402

2. Malaria control interventions coverage



Reported malaria control interventions

Year	Total number of ITNs/LLINs distributed	Total number of ACT treatment courses distributed	Total number of people protected by IRS	Total number of RDTs distributed
2003	13 680	0	117 247	
2004	9 530	0	350 261	
2005	163 000	0	450 885	1 440
2006	200 000	0	547 891	12 000
2007	244 560	0	872 481	1 500
2008	323 800	0	972 629	24 000
2009	66 545	258 180	1 440 482	129 725
2010	538 577	177 517	1 099 627	102 345
2011	21 831	273 180	1 480 416	216 475
2012	1 209 215	166 500	1 886 500	259 000



3. National drug policy

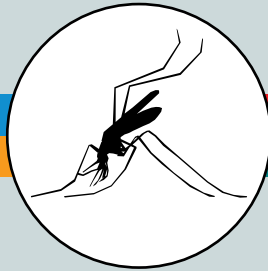
Unconfirmed uncomplicated	AS+SP
Uncomplicated	AS+SP
P. falciparum treatment	AL
Treatment failure (second line)	AL
Severe	QN;AM
P. vivax treatment	CQ+PQ(14d)
Mixed infection treatment (PF+others)	AS+SP
Last drug policy update (year)	2009

4. Financing malaria control

Government budget	Budget (US\$)	External contribution	Budget (US\$)
Government budget for malaria	2 293 646	Global Fund	8 908 540
Government expenditure for malaria	1 136 852	Other (nongovernmental organizations, foundations, etc)	5 807 093
Expenditure breakdown	Expenditure (US\$)		
Human resources & technical assistance	395 018		
Training	280 336		
ITNs/LLINs	544 468		
Insecticide & spraying materials	2 206 105		
Diagnostics	359 392		
Anti-malarial medicines	415 141		
Procurement & supply management	7 858 461		
Communication and advocacy	103 545		
Planning, administration and overheads	531 573		
Monitoring and evaluation	274 048		
Others	310 792		

Annex 3. Abbreviations

ABER	annual blood examination rate
ACT	artemisinin-based combination therapy
AL	artemether-lumefantrine
AM	artemether
AQ	amodiaquine
ART	artemisinin
AS	artesunate
CL	clindamycin
CQ	chloroquine
D	doxycycline
DHA	dihydroartemisinin
IPTp	intermittent preventive treatment in pregnancy
IRS	indoor residual spraying
ITN	insecticide-treated mosquito net
LLIN	long-lasting insecticidal net
MICS	multiple indicator cluster survey
MIS	malaria indicator survey
MQ	mefloquine
PG	proguanil
PPQ	piperaquine
PQ	primaquine
QN	quinine
RDT	rapid diagnostic test
SP	sulfadoxine-pyrimethamine
SPR	slide positivity rate
T	tetracycline



This report summarizes the malaria situation in the WHO Eastern Mediterranean Region by end 2012. It provides a summary of the regional burden and the key interventions in the seven countries in the Region with a high burden of malaria. The report expands on the annual World malaria report, providing comprehensive country profiles for all countries, including those that are malaria-free and those targeting elimination, as well as the high-burden countries.

