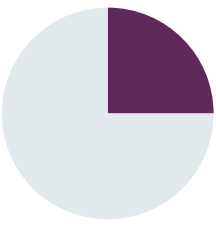
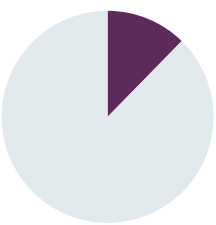
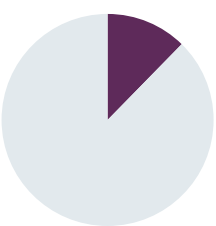


FEVER LANDSCAPE

QUALITY OF REPORTED DATA

METRICS	QUALITY	IDENTIFIED GAPS OR PROBLEMS
NUMBER OF MALARIA CASES AND DEATHS		<p>Cases of malaria appears to be under-reported, with the WHO estimating that there are actually around three times more cases than reported each year:</p> <ul style="list-style-type: none"> • Notification of cases is incomplete, in particular in the private sector • Diagnostic practices by health workers and CHWs in high-transmission areas do not follow guidelines, with in particular too few tests for malaria being performed as practitioners rely on their own clinical experience to determine a diagnosis and treatment • Malaria-specific training for CHWs and nurses in primary health settings has been lacking in recent years due to budgetary concerns, so few practitioners are trained to identify symptoms • Despite malaria diagnosis and treatment being free even in the private sector, the Directorate of Malaria control suspects under-reporting of malaria cases in order to charge for care
BURDEN OF OTHER INFECTIOUS DISEASES CAUSING FEVER		<p>Pakistan's lack of integrated surveillance and reporting means knowledge of infectious fever-causing diseases is very limited, with a reported low case load. The low expenditure on healthcare per person means investigation for febrile diseases is limited, and often clinical diagnosis is not confirmed by testing.</p>
ANTIMICROBIAL RESISTANCE		<p>The AMR programme of Pakistan has only recently been established and despite the high antibiotics consumption in the country, there is limited surveillance and awareness of AMR both among medial professionals and the general public.</p>

Quality of reported data is a major challenge in Pakistan, with significant gaps in monitoring and reporting on all topics

Sources: WHO, Directorate of Malaria Control, National MoH, Advention



FOCUS ON MALARIA SITUATION

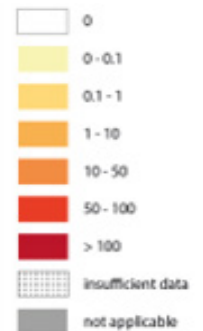
API* OF Pf (2017)



API* OF Pv (2017)



CONFIRMED CASES PER 1,000 POP



API: ANNUAL PARASITE INCIDENCE

SUSPECTED CASES TESTED AND TEST POSITIVITY IN PUBLIC HOSPITALS

Governmental data	2010	2015	2017
Share of suspected cases tested (RDT or microscopy)	52%	59%	78%
Test positivity (RDT or microscopy)	7%	5%	4%



GOVERNMENTAL DATA

REPORTED DATA MAY SUFFER FROM SYSTEMATIC BIASES IN COLLECTION OR REPORTING

MALARIA EPIDEMIOLOGICAL PROFILE (2017)

Parasite prevalence per 1,000		1.7		
Population in area:	Malaria free	Low transmission (0-1 case per 1,000 pop)	High transmission (>1 case per 1,000 pop)	
		3.3M (2%)	136.7M (69%)	57M (29%)
Major <i>plasmodium</i> species	<i>P. falciparum</i> : 21% ; <i>P. vivax</i> : 78%			
HRP2 deletion >5%	Not confirmed, considered unlikely			
Reported number of tests performed	6.5M			
Reported confirmed cases (health facility)	351K			
Estimated cases*	956K [726K - 1,300K]			
Reported deaths	113			
Estimated deaths*	805 [159 - 1,500]			

P. vivax is the main species of malaria, with almost the entire population at risk

Testing has increased significantly in recent years, to almost 80% of suspected cases

Note: (*) WHO estimate. Sources: WHO, Advention



NATIONAL MALARIA STRATEGY PLAN AND SURVEILLANCE

	DECISION-MAKERS	OTHER MALARIA INFLUENCERS (NATIONAL)	OTHER MALARIA INFLUENCERS (INTERNATIONAL)
NATIONAL MALARIA STRATEGY PLAN, 2016-2020	<p>Directorate of Malaria Control (DMC) National MoH*</p>	<p>State Ministries of Health Provincial Malaria Control Programmes Local NGOs (eg. Balochistan Rural Support Program, Indus Health Network, Pakistan Lions Youth Council...)</p>	<p> World Health Organization The Global Fund Save the Children</p>
	TARGET	<p>By 2020</p> <ul style="list-style-type: none"> Reduce the malaria burden by 75% in high and moderate endemic districts by achieving <5 API in high endemic areas and <1 API in moderate endemic areas Eliminate malaria in low endemic districts (0 API) 	
	KEY DIAGNOSTIC-RELATED INTERVENTIONS TO ACHIEVE TARGET	<p>Provide over 80% of at-risk population with quality assured diagnosis and treatment of malaria</p> <p>Achieve 80% community awareness on the benefits of early diagnosis and treatment of malaria</p> <p>Improve monitoring, evaluation, accountability and learning processes for malaria at local health facilities and care givers</p>	
MALARIA SURVEILLANCE	HEALTH FACILITY REPORTING RATE	MALARIA SURVEILLANCE SYSTEMS	
	<p>40%</p> <p>3,396 FACILITIES</p>	<p>The Directorate of Malaria is responsible for the national surveillance system, which currently includes three reporting systems (District Health Information System for clinical diagnoses, Malaria Information System for confirmed diagnoses and the Facility Monthly Report for facilities in districts with high malaria burden) but harmonization is being pursued</p> <p>Inclusion of private health providers in surveillance systems remains limited</p> <p>The WHO also operates a Disease Early Warning System in Pakistan</p>	

Pakistan's malaria programme aims mainly to control the burden in endemic states

Reporting remains fragmented and almost exclusively in the public sector

Note: (*) Ministry of National Health Services Regulations and Coordination. Sources: DMC, National MoH, Advention



MALARIA EPIDEMIOLOGY AND AMR LANDSCAPE IN PRIORITY COUNTRIES

PRIORITY COUNTRIES*							
	VIET NAM	CAMBODIA	S. AFRICA	INDIA	PAKISTAN	MYANMAR	THAILAND

MALARIA EPIDEMIOLOGICAL PROFILE

Parasite prevalence per 1,000 population	<1	–	<1	<1	1.7	<1	<1
Population living in malaria free area	25.1M (26%)	4.7M (29%)	51M (90%)	87.9M (7%)	3.3M (2%)	21.8M (40%)	34M (50%)
Population living in low transmission area	63.9M (67%)	3.6M (23%)	3.4M (6%)	1,100M (81%)	136.7M (69%)	23.6M (44%)	28.5M (42%)
Population living in high transmission area	25.1M (7%)	7.7M (48%)	2.3M (4%)	162.5M (12%)	57M (29%)	8.5M (16%)	5.4M (8%)
Proportion of <i>P. falciparum</i>	64%	58%	90%	62%	21%	66%	42%
Proportion of <i>P. vivax</i>	35%	41%	5%	37%	78%	34%	58%

MALARIA CASES AND DEATH

Country's reported tested cases	2.6M	168K	56K	125M	6.5M	664K	1.1M
Country's reported confirmed cases	4.5K	36K	22K	0.8M	351K	78K	8K
WHO's estimated cases	5.5K	208K	22.5K	9.6M	956K	240K	52K
Country's reported deaths	6	1	301	0.2K	113	37	33
WHO's estimated deaths	9	345	274	16.7K	805	490	<50

AMR LANDSCAPE

Average DDD**/person in 2015 (Avg in LMICs is 4.9)	11.5	–	9.2	4.9	7.1	–	6.7
Endorsement of the AMR National Plan	2013	2014	2014	2017	2017	2017	2016

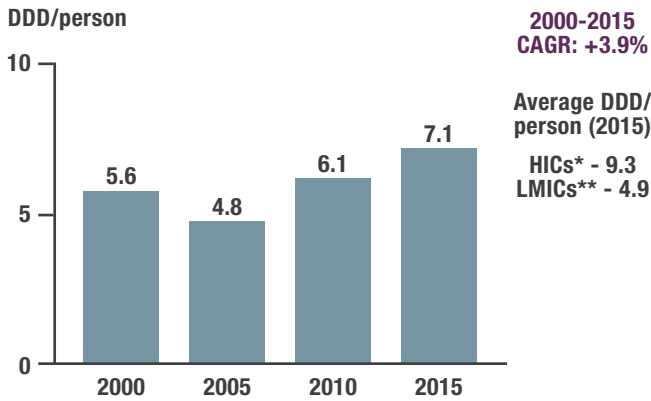
Notes: (*) Last available year; (**) Defined Daily Dose allowing for cross-country comparison. Sources: WHO, World Bank, GF, interviews, Advention



ANTIMICROBIAL RESISTANCE (AMR)

DESPITE HIGH RISK CONDITIONS...

Antibiotics consumption in Pakistan is higher than in most LMICs, and rising quickly since 2005:

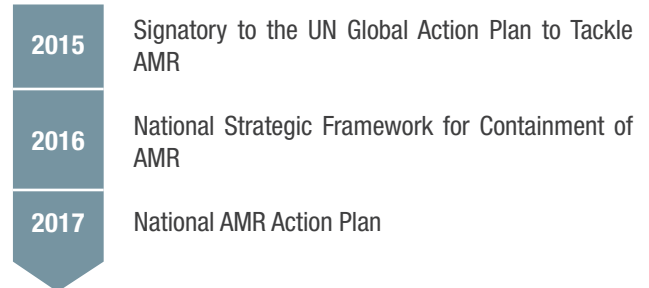


Therapeutic use of antibiotics remains poorly managed, with many behavioral risk factors:

- 50% of the population self-medicates, including with antibiotics
- 75% of advertising for antibiotics does not meet WHO standards
- 70% of consultations lead to the prescription of antibiotics

Consumption of antibiotics by livestock or more generally for uses other than human therapeutic cases is not monitored.

...AMR IS A RECENT CONCERN WITH LIMITED POLICY IMPACT



Communication of AMR as a health risk remains limited.

The National AMR Programme is focused mainly on improving awareness of AMR amongst medical professionals and establishing a set of guidelines for clinicians' use of antibiotics.

The states are responsible for establishing referent laboratories to monitor AMR and superbug emergence.

All classes of antibiotics remain available over-the-counter and can be included in animal feed.

Pakistan's antibiotics consumption is high and rising rapidly, but AMR is only a recent concern which has had little translation in policy

Notes: (*) High-Income Countries; (**) Low- and Middle-Income Countries. Sources: National MoH, IQVIA, Advention