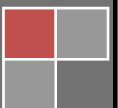
[Year]

2015

Malaria Annual Report

Global Fund Grant

Directorate of Malaria Control
Islamabad



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Acronyms

ABER	Annual Blood Examination Rate
ACD	Association for Community Development
API	Annual Parasite Incidence
ASD	Association for Social Development Pakistan
BCC	Behavior Change Communication
BHU	Basic Health Units
CBOs	Community Based Organization
CCM	Country Coordination Mechanism
CD	Civil Dispensaries
CHCs	Community Health Centers
DEWS	Disease Early Warning System
DHIS	District Health Information System
DoMC	Directorate of Malaria Control
EMRO	Eastern Mediterranean Regional Office
FATA	Federally Administered Tribal Areas
FR	Frontier Region
GF	Global Fund
HF	Health Facility
IRS	Indoor Residual Spraying
IDPs	Internally Displaced Population
KPK	Khyber Pakhtunkhwa
LFA	Local Funding Agent
LHWs	Lady Health Workers
LLINs	Long Lasting Insecticide Treated Nets
MIS	Malaria Information System
MoU	Memorandum of Understanding
NFM	New Funding Model

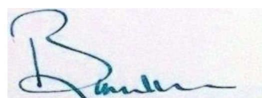
NGOs	Non Governmental Organizations
NRSP	National Rural Support Program
OSDV	On Site Data Verification
PF	Plasmodium Falciparum
PLYC	Pakistan Loin Youth Council
PR	Principal Recipient
PV	Plasmodium Vivax
RDTs	Rapid Diagnostic Tests
RSQA	Routine Service Quality Assessment
SC	Save the Children
SR	Sub Recipients
WHO	World Health Organization
WMR	World Malaria Report

FOREWORD

In recent years, with the support of Global Fund, there has been significant progress in expanding coverage of key malaria interventions such as early diagnosis and prompt treatment with effective anti-malarial drugs and vector control interventions with an ambition to provide universal coverage with Long Lasting Impregnated Nets (LLINs) in affected populations in Pakistan. Major efforts to scale up have had the support of international and national partners. In 2012/13 radical treatment has been first introduced at primary and secondary health facilities, microscopic diagnosis was strengthened and there was an expansion of the use of Rapid Diagnostic Tests which diagnose both P.vivax and P.falciparum at both hospital and health facility levels. Vector control was stepped up and only in 2014/15about 2.7 million LLINs were distributed free of cost in highly malaria endemic areas.

The main aim of expanding access to these interventions was to achieve objectives set out in national and provincial strategic plans and to address the recommendations of national and international reviews. Since 2012 the malaria control activities in districts in high risk stratum have increased rapidly resulting in increased coverage with LLINs, and availability of ACTs in public health facilities. The results to date are due to the enormous support from Global Fund and technical support agencies.

DoMC is committed to provide standard and effective malaria control interventions in Malaria endemic districts throughout Pakistan and control Malaria endemicity to reduce morbidity and mortality



Director
Directorate of Malaria Control
Islamabad, Pakistan

Executive Summary

Malaria is one of the most devastating communicable diseases. In addition to being a major threat to health of millions of people, it causes a severe hurdle to the economic development of tropical and subtropical countries of the world. Malaria is the 3rd most prevalent and a major cause of morbidity in Pakistan and millions of people who live in highly endemic areas of the country are exposed to risk of developing malaria at some point in their life.

Pakistan has a population of approximately 185 million with 98% (182 million) of population at risk of developing Malaria. Global Fund (GF) support is the main driving force for changing malaria epidemiology in Pakistan since 2002. GF grant supported 43 districts in 4 provinces/regions in 2015. The grant is implemented through 5 private sector & 4 public sector SRs. GF Malaria grant covered approximately 29.77 million population in 43 districts of Pakistan. 1445 public sector HF were supported in addition to 10 private sector HF per districts which were provided RDTs to increase diagnosis and in turn rational treatment. All these HFs provided diagnostic and curative services to around 1.3 million suspected Malaria cases. As per protocols all these patients were tested for malaria. 0.13 Million of the suspected patients were confirmed as malaria cases and provided treatment according to national guidelines. Most of these cases (54%) were diagnosed by microscopy.

Historically, the predominate species in GF supported district has been Plasmodium falciparum but since 2011 onwards, there has been epidemiological shift in predominant specie from falciparum to vivax which in 2015 contributes to 79% of the malaria case load in GF supported districts.

API, over the years is steadily decreasing with the efforts of PR and SR working in the GF supported districts. API has dropped by 41%, from a high of 10.13 in 2010 to 5.97 in 2015. Aggregated Slide + RDT Positivity Rate (SPR) in 2015 was 10.53. Similarly SPR also showed a 46% decline from high of 19.3 in 2011 to 10.53 in 2015.

Although National PF% in 2015 was 14.7%, KPK predominantly faces challenge from PV as vivax cases accounts for 95% of all confirmed cases. Whereas Sindh, FATA and Balochistan all have PF% above national average i.e. 23.44%, 15.67% and 29% respectively.

When comparing national averages of API, ABER and SPR with that of provincial indicators, FATA and KPK’s population is more at risk of malaria compared to other two provinces as their API is more than the national average of 4.8. Correspondingly SPR of Balochistan and KPK is more than national average

of 10.08. Conversely with regards to ABER, KPK lag behind the national average. FATA and Balochistan's ABER is slightly above national average.

In 2015 1.74 million LLIN were distributed in 23 Stratum 1-A districts. Highest numbers of LLINs (574384) were distributed in Sindh (Tharparker and Khairpur) covering 52.79% of rural population in 2 districts. In 2015, 2779 health care providers were trained in 43 grant selected districts. Of the total trained staff, majority 36% (1006) were trained in Malaria information system. 874 HCP were trained on Malaria Case Management and 899 Malaria Technicians were trained for Malaria Diagnosis and QA from Microscopy and RDT centers in targeted districts of DOMC.

In 2015, 130431 people received awareness regarding preventive and curative service utilization in 43 districts. All the BCC activities of 2015 occurred in P17 i.e. Oct-Dec 2015. In spite of huge uncertainties in grant signing and subsequent challenges in implementation and continuity of services in grant supported districts, DOMC sustained an ensured delivery of Malaria control services and sustained its grant rating above "A" which is carried out by Global Fund in 2015.

Introduction

Malaria is the most prevalent and devastating parasitic disease in tropical countries and has compelled the attention of the public health workers and policy makers alike. It is one of the most devastating communicable diseases. In addition to being a major threat to health of millions of people, it also causes a severe hurdle to the economic development of tropical and subtropical countries of the world. Malaria is endemic in a total 101 countries, and recent review of worldwide prevalence of malaria indicates that 40% of world population is at the risk of developing Malaria.

Malaria is the 3rd most prevalent and cause of morbidity in Pakistan (DHIS 2014) and millions of people who live in highly endemic areas of the country are exposed to risk of developing malaria at some point in their life.

Global Fund Grant

GF support is the main driving force for changing malaria epidemiology in the country. Since 2002, in addition to support from public sector, GF remained the main external funding source for malaria prevention and control in Pakistan. Pakistan was recipient of Malaria grant of GF for Round 2, 7 and 10. GF R-2 mainly focused on capacity building, while Round-7 supported the case management and implementation of vector control interventions mainly LLINs to target populations in 19 high-endemic districts. The GF R-10 was implemented in 38 high-endemic districts with focus on vector control, case management, behavior change communication (BCC) and capacity building interventions.

In 2015, DoMC, a public sector PR, faced many challenges in implementation and continuity of services in grant supported districts. Extension phase SSF Round 10 was to expire on 31st March 2015. A joint DoMC and Save the Children concept note was developed for NFM for period of April 2015 to December 2017 which was subsequently approved by Global Fund. It was expected that grant would be signed by mid March and from April onward PRs will transition into New Funding Model, however frame work agreements was not signed because of variety of reasons.

In May 2015 only 3 months of extension was signed from Aril to June 2015. As again, the framework agreement was not signed till June, negotiations for extension agreement went underway. During mean time Save the Children (SC) withdrew and lost its status as private sector PR.

DoMC had to develop these extension agreement documents as sole PR with the trust from GF, CCM, LFA and WHO that DoMC possess required capacity, experience and expertise to be sole PR for GF Malaria grant. It was discussed and decided that DOMC would retain SC core staff and their SRs for the

better management of grant. In August 2015, Global Fund and DOMC signed grant agreement for one year (July 2015 to June 2016). DOMC immediately carried out assessment of private sector SRs and signed grant agreement accordingly. DOMC also carried out assessment of provincial Malaria Control programs (PCPs) of Balochistan, Sindh, KP & FATA. Afterwards these control programs were for the first time involved directly in the grant. Accordingly grant agreements were signed with PCPs as public sector SRs. In November 2015 DOMC was conveyed that Merlin, who was one of the major SR implementing grant in almost 50% of grant support districts, would not continue working in Pakistan after 31st of December 2015. Despite various challenges, DOMC ensured continuity of malaria control services throughout grant supported districts by ensuring the availability of Anti-malarial drugs and diagnostic kits in the targeted health facilities..

Global Fund grant is supporting 43 districts in 4 provinces/regions. Four districts, Jaffarabad, Bolan, Jhalmagsi and Dera Bugti, having API more than 10 were added in grant in year 2015. The grant was implemented through 5 private sector & 4 public sector SRs. The list of districts with their respective SRs is as follows:

S. No.	Districts/Agencies	Province	Sub Recipient
1	Zhob	Balochistan	Merlin
2	Harnai	Balochistan	Merlin
3	Loralai	Balochistan	Merlin
4	Killa Saifullah	Balochistan	Merlin
5	Shirani	Balochistan	Merlin
6	Pishin	Balochistan	Merlin
7	Musakhel	Balochistan	Merlin
8	Gawadar	Balochistan	NRSP
9	Kech	Balochistan	NRSP
10	Kharan	Balochistan	NRSP
11	Washuk	Balochistan	NRSP
12	Chagi	Balochistan	NRSP
13	Punjgur	Balochistan	NRSP

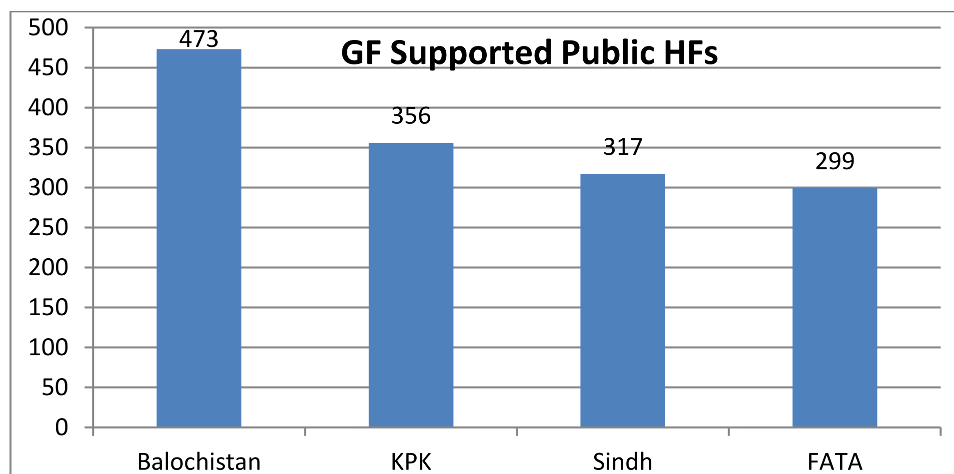
14	Mastung	Balochistan	Merlin
15	Nushki	Balochistan	Merilin
16	Nasirabad	Balochistan	Merlin
17	Sibi	Balochistan	Merlin
18	Bannu	KPK	Merlin
19	Lakki	KPK	Merlin
20	Tank	KPK	Merlin
21	D.I. Khan	KPK	Merlin
22	Charsada	KPK	Merlin
23	Mardan	KPK	Merlin
24	Nowshera	KPK	Merlin
25	FR Bannu	FATA	ACD
26	FR Laki	FATA	ACD
27	N. Waziristan	FATA	ACD
28	FR Tank	FATA	ACD
29	FR D.I.Khan	FATA	ACD
30	Kurram	FATA	ACD
31	Orakzai	FATA	ACD
32	S. Waziristan	FATA	ACD
33	Khyber	FATA	ACD
34	FR Peshawar	FATA	ACD
35	FR Kohat	FATA	ACD
36	Bajor	FATA	ACD
37	Mohmand	FATA	ACD
38	Tharparker	Sindh	PLYC
39	Mirpurkhas	Sindh	PLYC
40	T.Allahyar	Sindh	PLYC
41	Khairpur	Sindh	PLYC
42	Thatta	Sindh	NRSP

44	Jaffarabad	Balochistan	These districts were handed over to ASD in July 2015 but implementation of malaria control and case management interventions were not in place till January 2016
45	Jhalmagsi	Balochistan	
46	Bolan/Kech	Balochistan	
47	Dera Bugti	Balochistan	

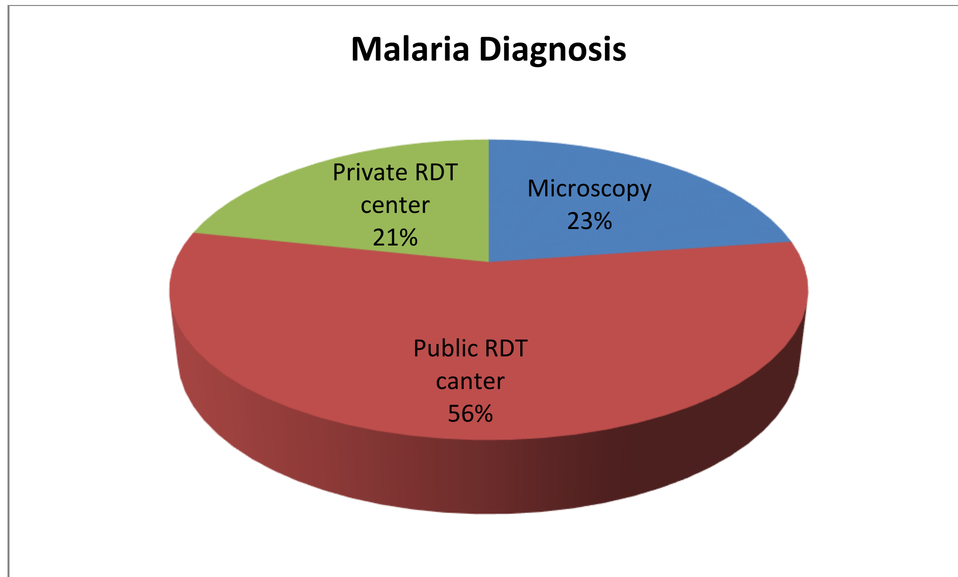
Case Management

GF supports primary health care facilities (HF), BHU and above, in 43 grant supported districts. In 2015, GF supported 1445 public sector HF in addition to 10 private sector HF per districts which were provided RDT to increase diagnosis and in turn rational treatment. All these HFs provided diagnostic and curative services to around 1.3 million suspected Malaria cases.

473 HF were supported in 17 districts of Balochistan followed by 356 HF in 7 districts of KPK, 317 HF in 6 districts of Sindh and 299 HFs in 13agencies/regions of FATA



Majority of these GF supported HFs were RDT centers which amounted to 77% of all the HFs and the rest 23% were microscopy centers.



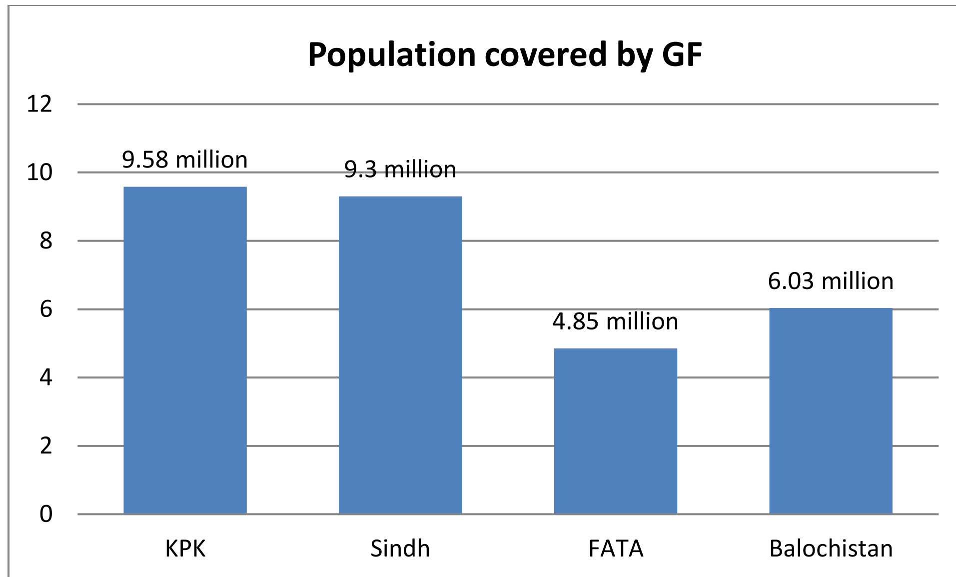
Malaria epidemiology 2015

Malaria in Pakistan is typically unstable and major transmission period is post monsoon i.e. from August to November. Major vector species are Anopheles culicifacies and A. stephensi, both still susceptible to the insecticides but recently Pakistan has reported resistance to the three classes of insecticides (excluding carbamates).

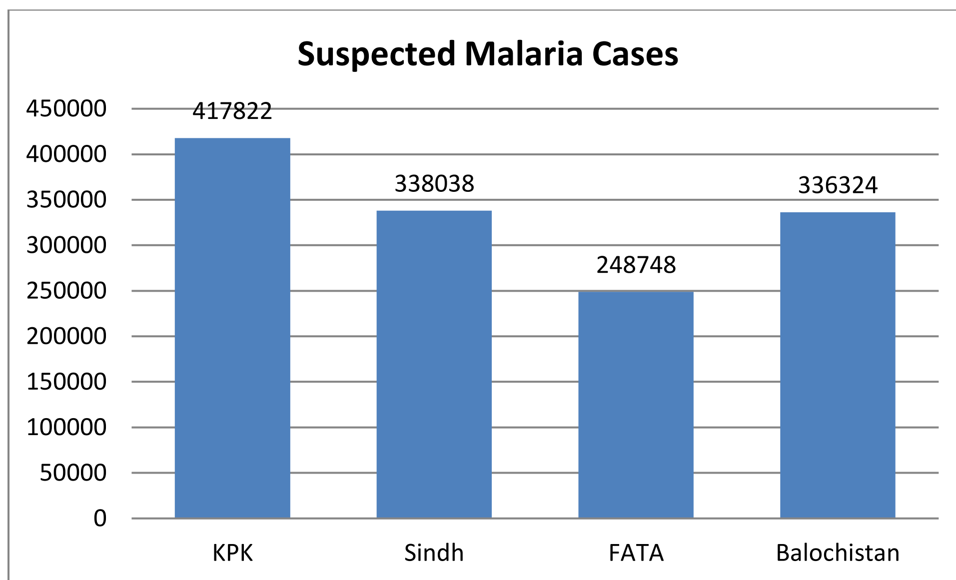
Pakistan has a population of approximately 185 million with 98% (182 million) of population at risk of developing Malaria (WMR). Of the total, 29% of population is living in high malaria transmission regions and 69% population in low malaria transmission areas.

Epidemiologically, Pakistan is classified as moderate malaria endemic country with a national API averaging at 1.48 with 8.5 million suspected cases, 3.4 million clinically treated cases and 275149 confirmed cases (WMR 2015). Malaria endemicity shows wide diversity within and between the provinces and districts. Plasmodium Vivax and Plasmodium Falciparum are the only prevalent species of parasites, with P.vivax being the major parasite species responsible for 88% reported confirmed cases in the country.

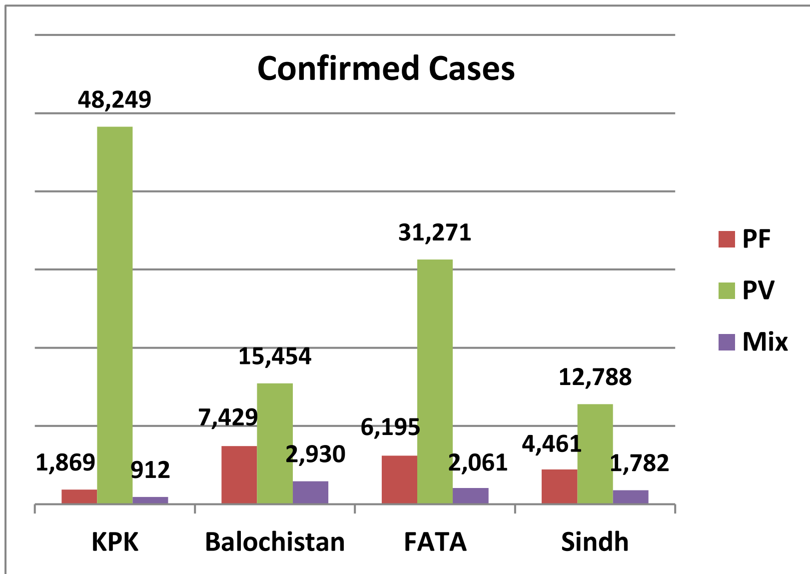
GF Malaria grant covered approximately 29.77 million population in 43 districts of Pakistan in 2015.

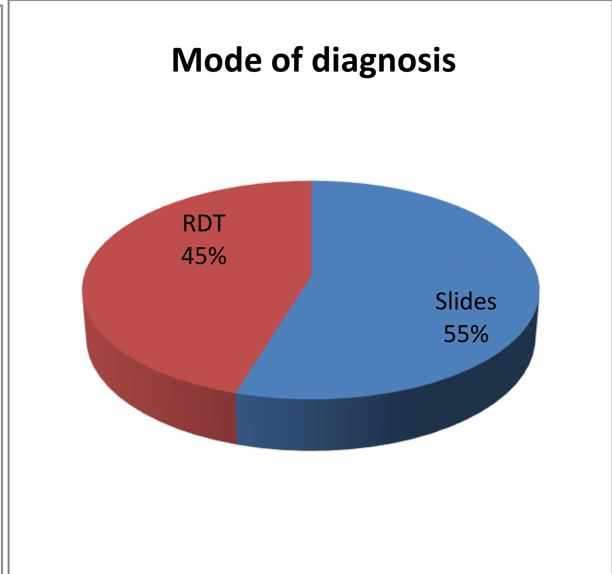


1.34 million Patients reported to GF supported health facilities with suspected malaria, with highest suspected cases reported from KPK and Sindh with 417822 and 338038 suspected cases respectively.

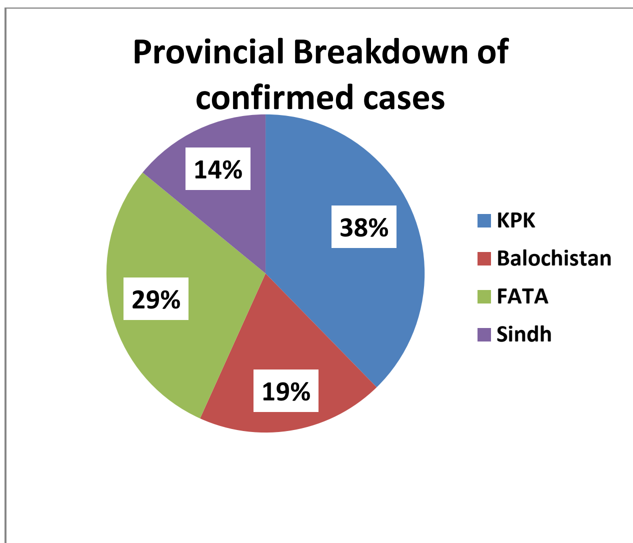


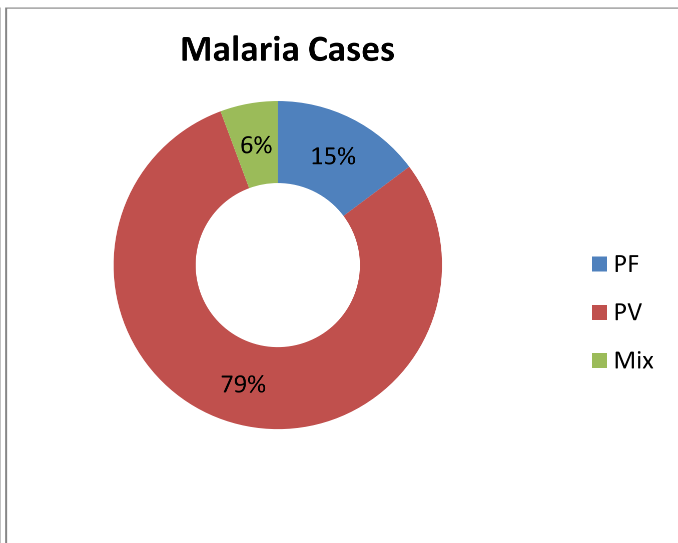
As per protocols all these patients were tested for malaria. 0.13 Million of the suspected patients were confirmed as malaria cases and provided treatment according to national guidelines. Most of these cases (54%) were diagnosed by microscopy.





Of the total confirmed cases, KPK reported the highest percentage of confirmed cases followed by FATA, Balochistan and Sindh.





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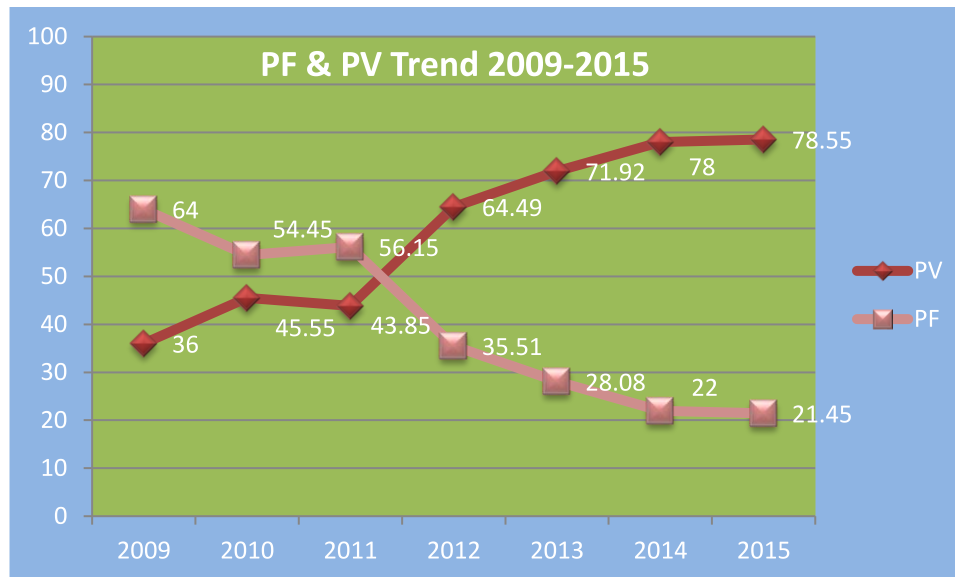
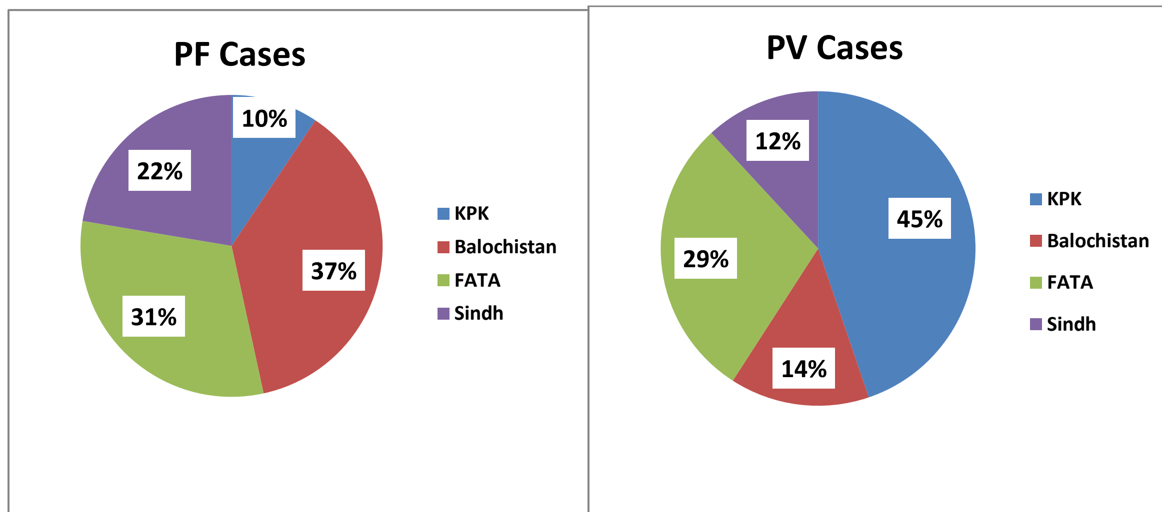
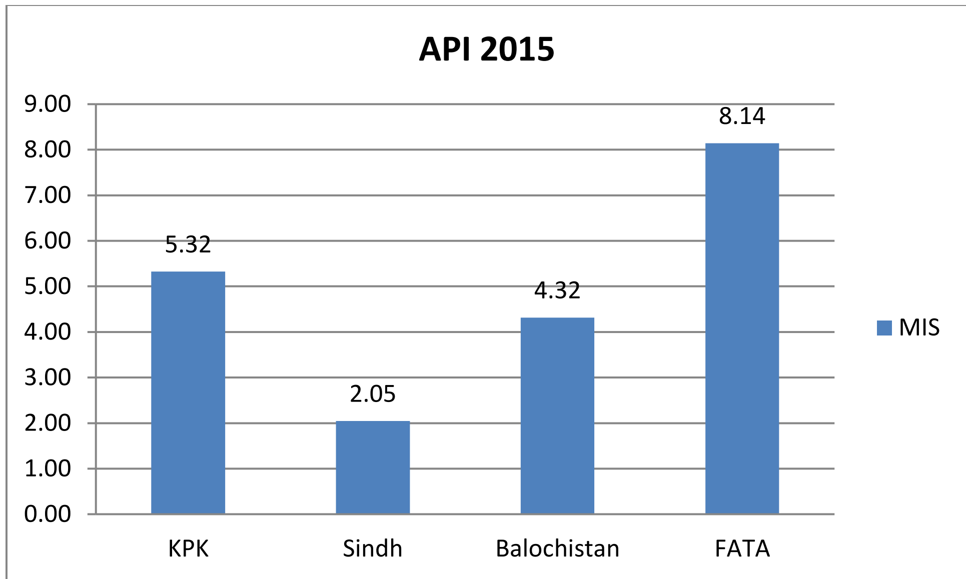




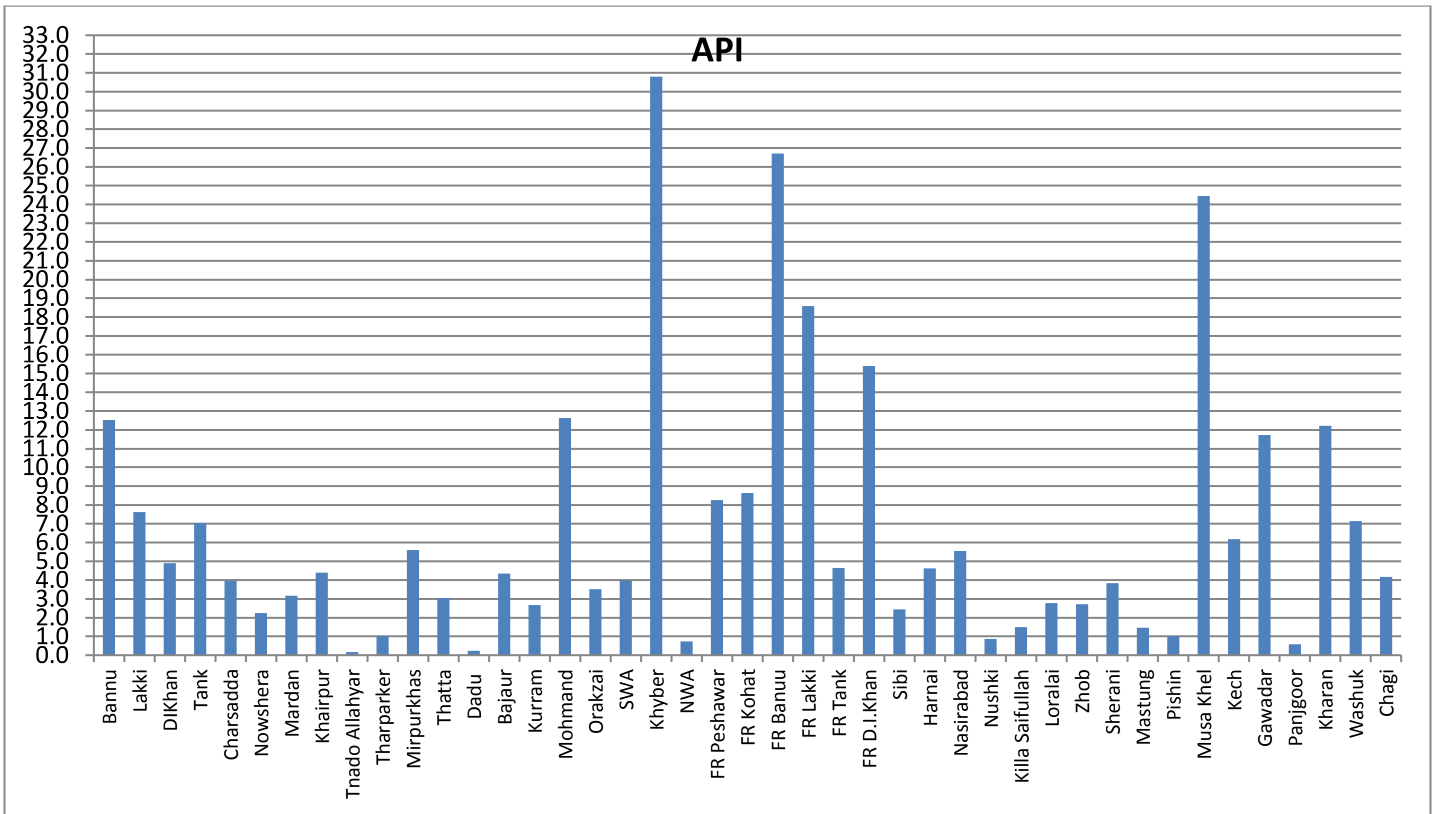
Majority of the confirmed PV cases (45%) were reported from KPK followed by FATA with 29% of PV case load. Similarly, Balochistan had the highest PF case load with 37% followed by FATA with 31% of all PF reported in GF supported districts.

The average API of these 43 districts was 5.97 with highest average API reported from FATA 8.14 followed by KPK 5.32, Balochistan 4.32 and Sindh 2.05.

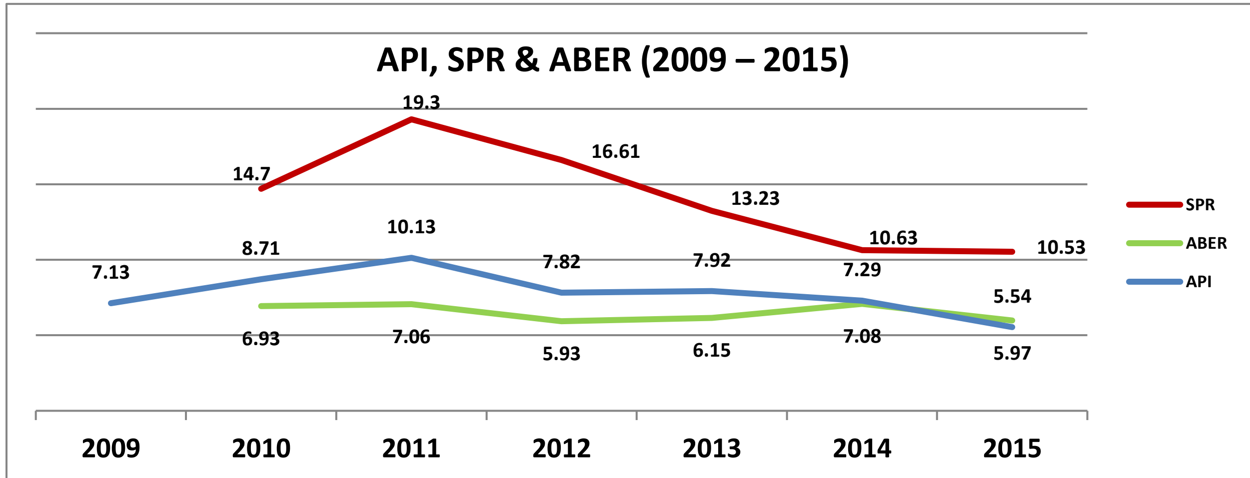


Highest API was reported from Khyber Agency (30.8) followed by FR Bannu (26.7) and Musakhel (24.4).

7 districts reported API ≤1 with lowest API reported from Tando Allahyar (API 0.18).

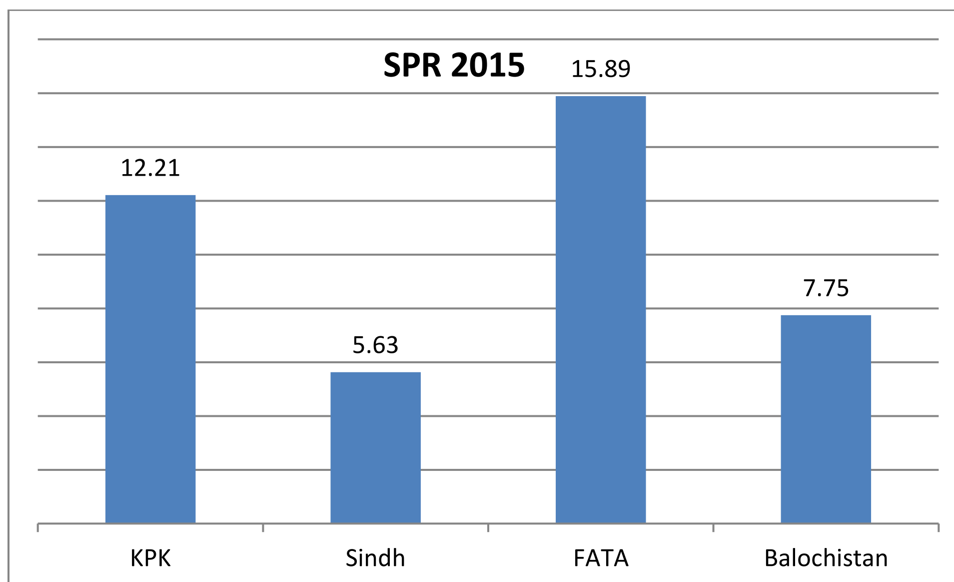


API, over the years is steadily decreasing with the efforts of PR and SR working in the GF supported districts. API has dropped by 41%, from a high of 10.13 in 2010 to 5.97 in 2015



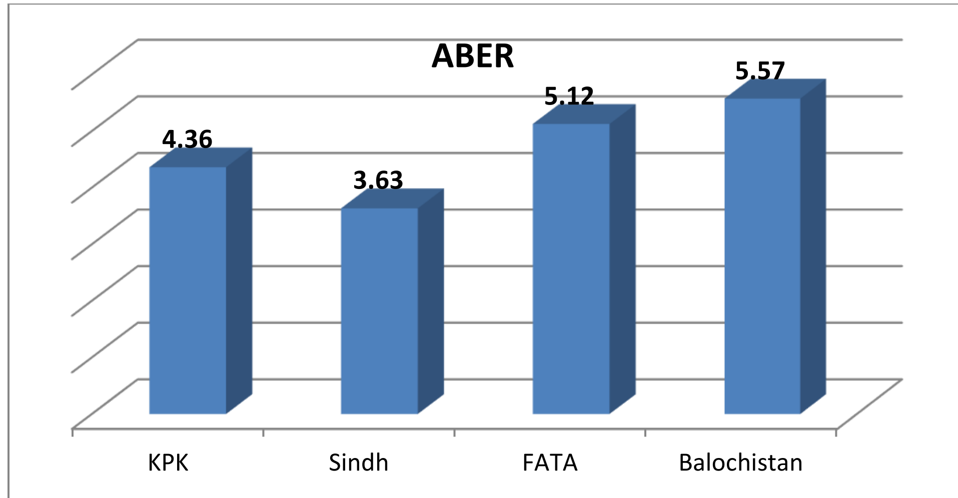
Aggregated Slide+RDT Positivity Rate SPR in 2015 was 10.53. Similarly SPR also showed a 46% decline from high of 19.3 in 2011 to 10.53 in 2015.

Highest SPR was reported from FATA (15.89) followed by KPK (2.21), Balochistan (7.75) and Sindh (5.63). There was no significant difference in segregated slide positivity (10.8) and RDT positivity (9.3). Highest aggregated SPR amongst the 43 district was reported from Musakhel (34.05) followed by Kharan (26.43)

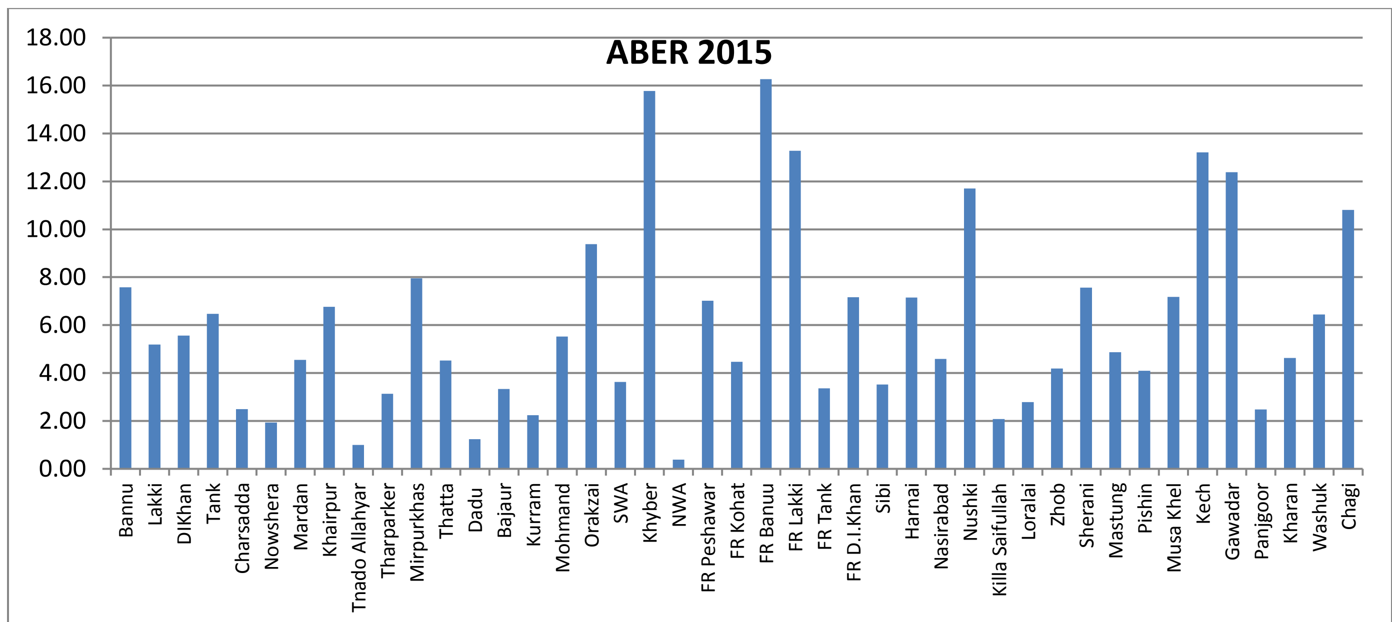


ABER is an index of operational efficacy of the programme. The Annual Parasite Incidence (API) depends upon the ABER. A sufficient number of blood slides should be systematically obtained and examined for malaria parasite to work out accurate API. But ABER during same period also dropped by 21% from 7.08

to 5.54. None of the provinces/Region fulfilled the WHO criteria for ABER. Highest ABER was reported from Balochistan (5.57).

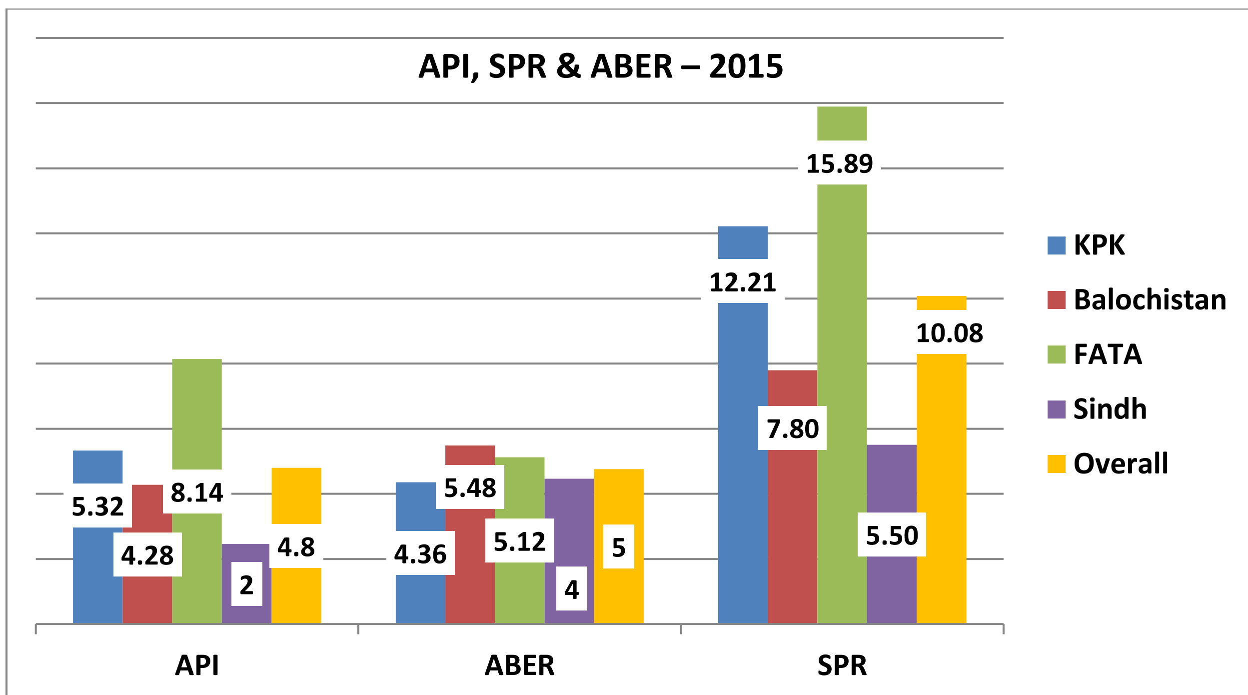


Although none of the provinces fulfilled the WHO criteria for ABER, yet individual districts/Agencies did reach the target for ABER. Only 7 districts had ABER above 10 (3 agencies from FATA, 4 districts from Balochistan). Highest ABER was reported from FR Bannu 16.27 followed by Khyber 15.78, FR Lakki 13.28 and Kech 13.21. North Waziristan Agency reported lowest ABER 0.28. This can be due to the fact that due to security issues, the population was not accessible and HFs were not functional. Amongst the settled areas, Tando Allahyar reported the lowest ABER of 1.



When comparing national averages of API, ABER and SPR with that of provincial indicators, that data suggest that FATA and KPK's population is more at risk of malaria compared to other two provinces as their API is more than the national average of 4.8. Correspondingly SPR of Balochistan and KPK is more than national average of 10.08. Conversely with regards to ABER, KPK lag behind the national average. FATA and Balochistan's ABER is slightly above national average but still far from recommended ABER by WHO. Although National PF% in 2015 was 14.7%, KPK faces challenge from PV as vivax cases accounts for 95% of all confirmed cases. Whereas Sindh, FATA and Balochistan all have PF% above national average i.e. 23.44%, 15.67% and 29% respectively

Interestingly Sindh in 2015 reported lowest API and SPR but this can be explained by the fact that Sindh had the lowest ABER. As the Annual Parasite Incidence (API) depends upon the ABER, the low ABER resulted in low API which is not representative of true malaria transmission in the province



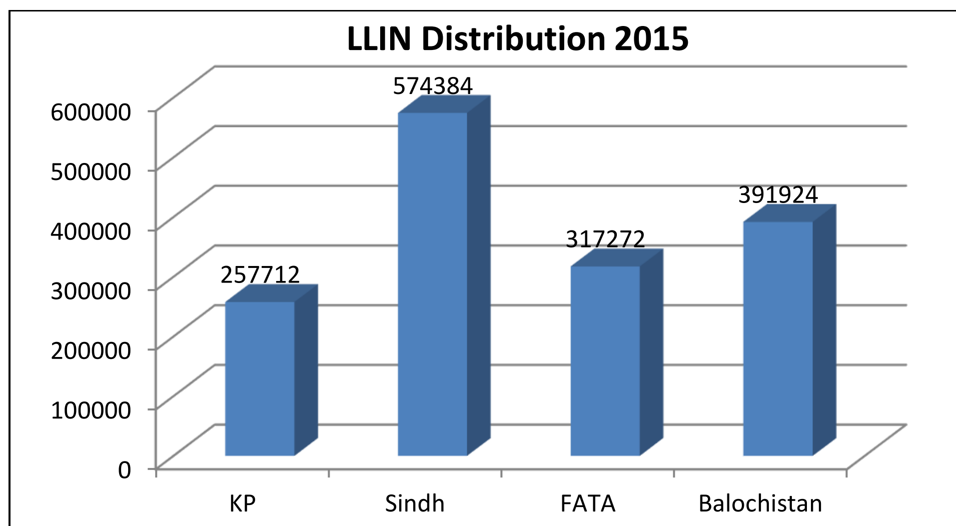
Vector Control

Vector control is an essential component of malaria prevention. Such control targets the mosquitoes capable of transmitting malaria parasites. Vector control has been proven to successfully reduce or interrupt malaria transmission when coverage is sufficiently high. The two core, broadly applicable measures for malaria vector control are long-lasting insecticidal nets (LLINs) and indoor residual spraying (IRS).

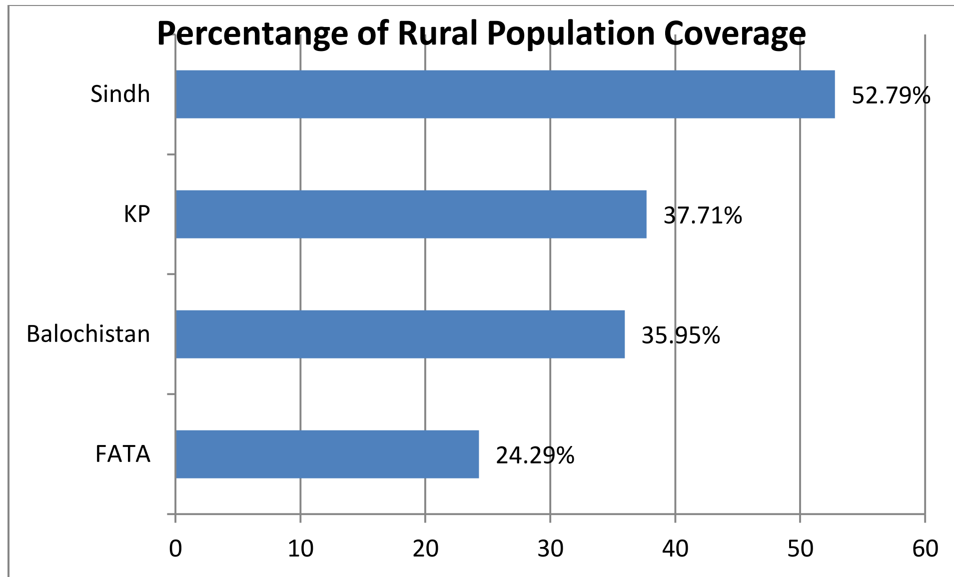
WHO recommends that endemic countries protect all those at risk of malaria with LLINs or IRS where appropriate. Currently under NFM, GF is rolling out LLINs as a major vector control intervention in selected 43 districts whereas IRS is reserved for only outbreak response across Pakistan.

DOMC has planned that universal coverage of LLINs would be achieved in all those districts where API is more than 10/1000 population. In 2015, 23 districts of Pakistan having API more than 10 were selected for universal coverage. It was further planned that universal coverage would be achieved through mass distribution mechanism.

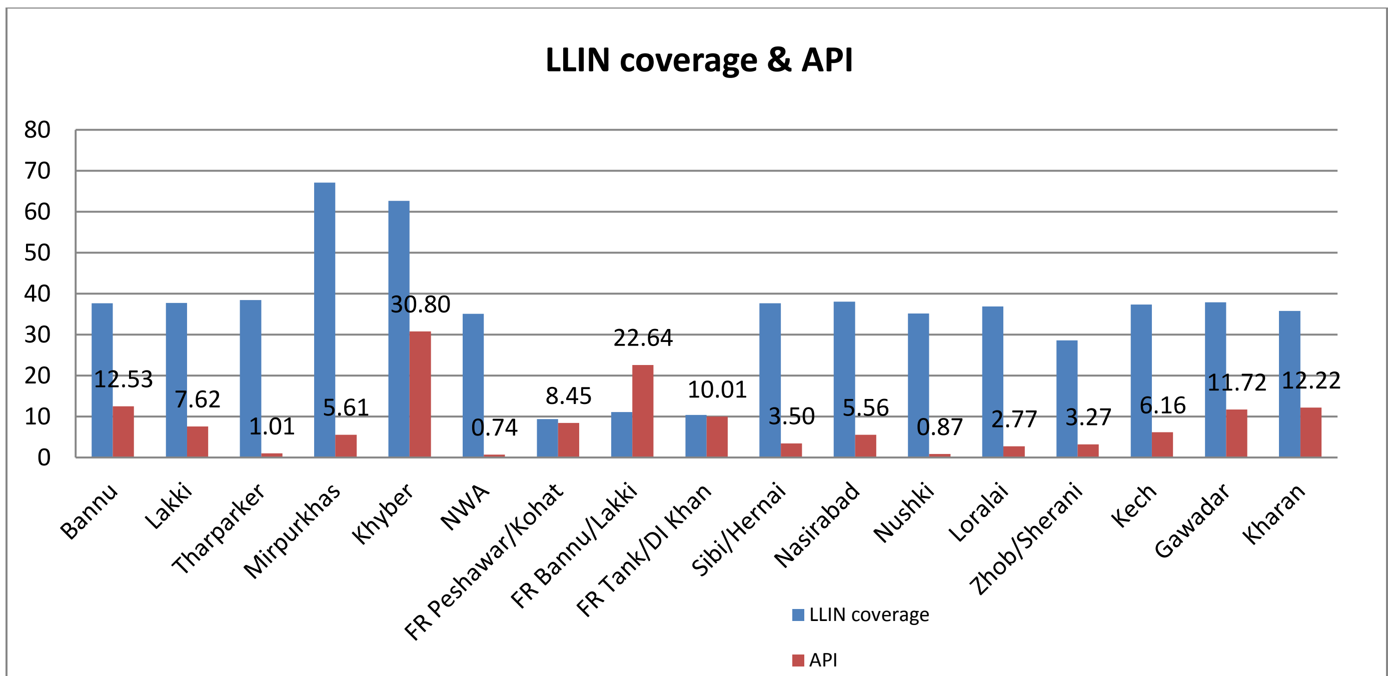
Amongst the selected district, universal coverage (80%) of rural population with LLINs was ensured. 1.74 million LLIN were distributed in the stratum 1-A districts of the GF malaria grant supported districts.



Highest number of LLINs (574384) were distributed in Sindh (Tharparker and Khairpur) covering 52.79% of rural population in 2 districts. LLIN coverage in Balochistan was 35.95% of rural population in 10 districts with distribution of 391924 LLINs. FATA received 317272 LLINs covering 24.29% rural population. KPK received 257712LLINs that covered 37.71% of rural population in 2 supported districts.



None of the district's data reveled universal coverage. Khairpur followed by Khyber showed highest rural population coverage i.e. 67.17% & 62.67% respectively. The percentage of rural population coverage in remaining districts was in high 30s except FATA/FR regions with around 10% rural population coverage despite having one of the highest APIs in GF supported districts.



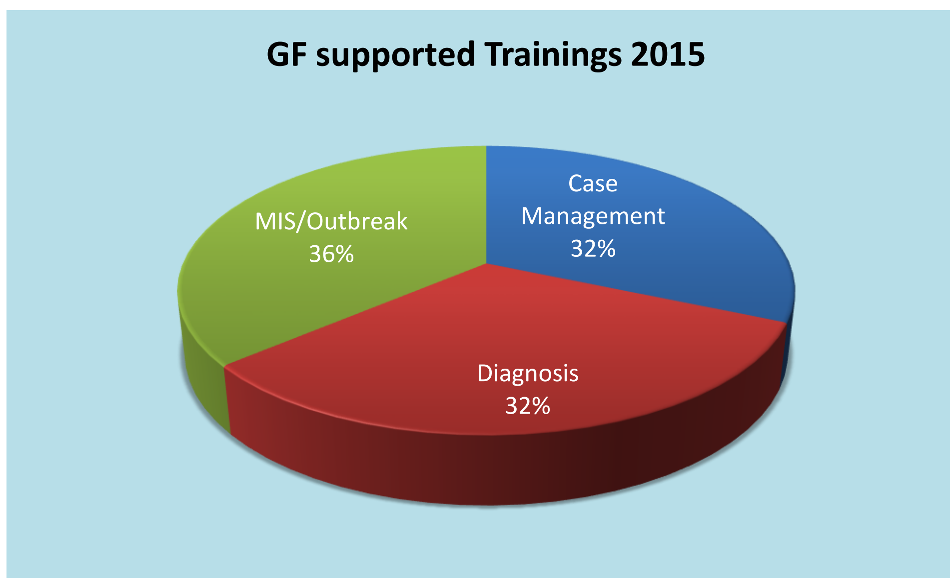
Malaria Trainings

Regular capacity building and on job trainings is of utmost importance and ensures standard and quality malaria control interventions uniformly implemented across the GF supported districts. GF supported Malaria trainings covered 3 thematic areas namely,

1. Case Management
2. Diagnosis & Quality Assurance
3. MIS and outbreak response

Trainings are provided to the facility focal points and health care providers of the targeted health facilities in all grant supported districts of Pakistan.

In 2015, 2779 health care providers were trained in total. Of the total trained staff, majority 36% (1006) were trained in Malaria information system and outbreak response, comprising of data collection, collation & analysis and reporting at different level of Malaria programs. 874 health care providers were trained from health facilities on Malaria Case Management and 899 Malaria Technicians were trained on Malaria Diagnosis and Quality Assurance.

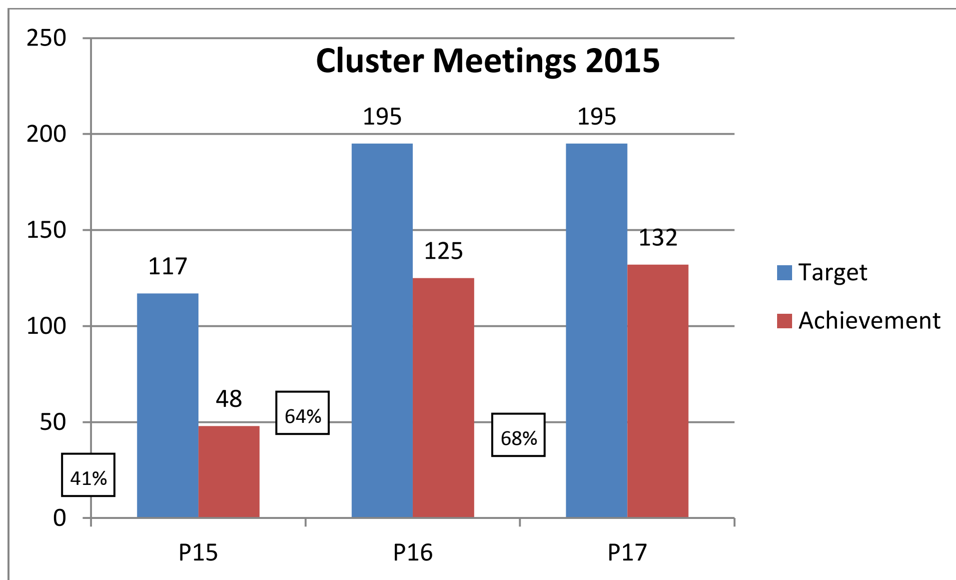


Cluster Meetings

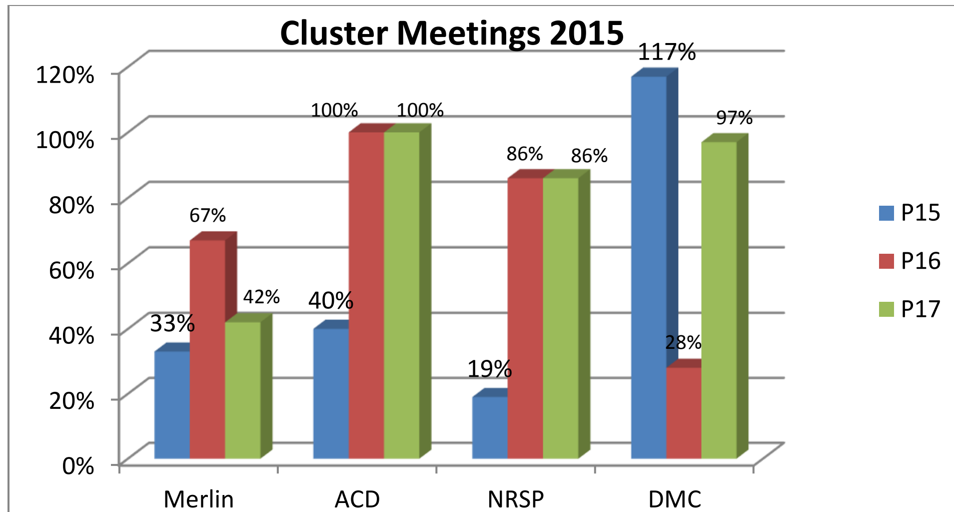
Cluster meetings are planned by DOMC which are conducted at District level. Facility focal points of all the project supported health facilities participate in this meeting. The data of malaria cases and stock for the previous month is presented and discussed for its validity, reliability, consistency and accuracy. Also

the issue related to implementation of grant interventions are discussed and solutions are identified. The meeting is chaired by EDO/DHO/Agency Surgeons of the districts/agencies. Representative of SR is also present in the meeting. DMU in-charge records minutes of the meetings and prepares FM3 for onward sharing with province. Regular monthly cluster meetings were conducted by 5 SRs in 43 GF supported districts to ensure optimal coordination, ownership and smooth flow of data from districts to provincial programs to GF SRS & PRs

In P15, April to June 2015, 117 cluster meetings were planned but the actual achievement was well short 48 (41%) of the target. Similar situation was observed in P16 July-Sep 2015 and P17 Oct-Dec 2015 where these cluster meeting fell short of intended target with 64% and 68% of achievement respectively.



In P15, apart from DoMC/PLYC no SR achieved 100% target. In P16 and P17 100% target of cluster meeting was achieved by ACD. NRSP also showed a sustained 86% achievement in both P16 and P17.

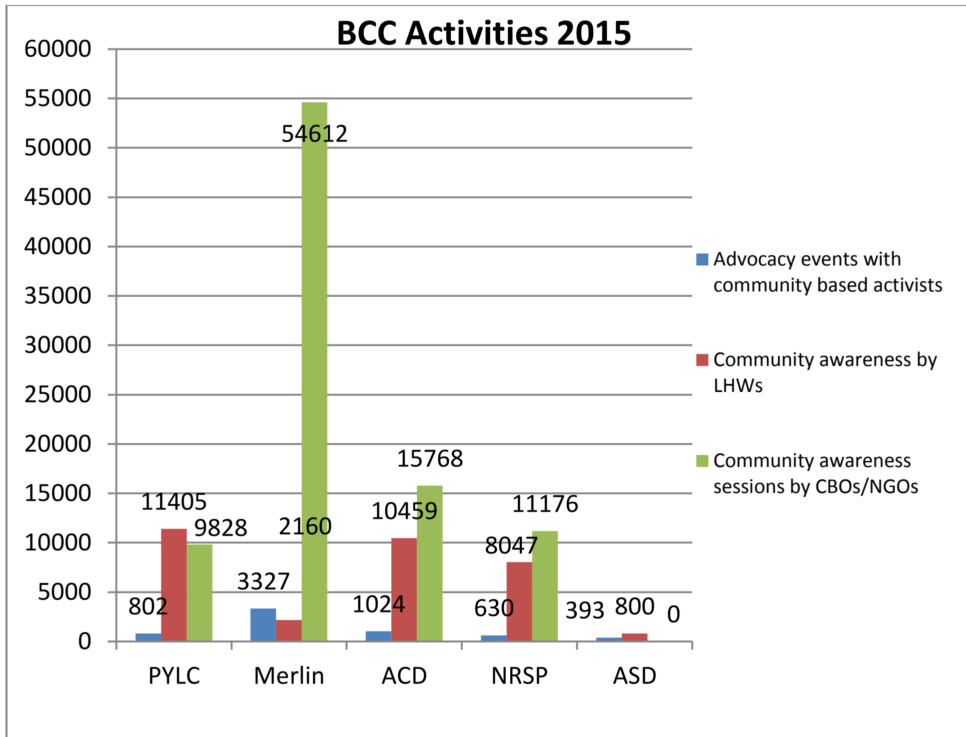


Both ACD and DoMC/PLYC achieved 80% of their annual target of Cluster meetings followed by NRSP 64%, Merlin 47%. ASD didn't conduct any cluster meeting in their 4 districts of Balochistan as these district were handed over to them in July and implementation didn't start till January 2016.

Behavior Change Communication

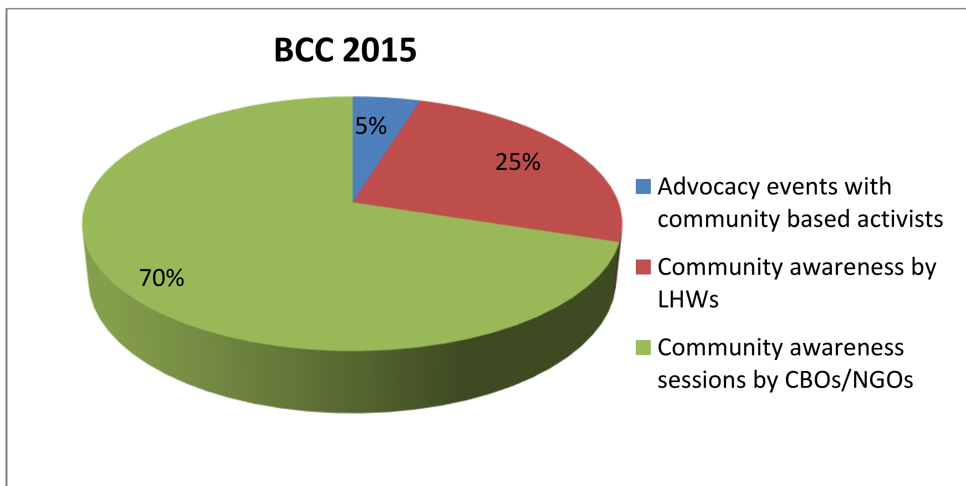
Regular Behavior Change Communication BCC activities were conducted in 43 selected districts by 5 SR. These activities included Advocacy events with community based activists including LHWs, CBOs, NGOs, religious leaders, local elders and elected representatives for community awareness to enhance preventive and curative services utilization in 43 districts. These trained LHWs, CBOs and representatives from community than conducted community awareness session at community and health facility level.

In 2015, 130431 people received awareness regarding preventive and curative service utilization in 43 districts. All the BCC activities of 2015 occurred in P17 i.e. Oct-Dec 2015.



Participants of community awareness session by CBOs/NGOs formed the majority (70%) of the people receiving BCC followed by participants of community awareness session by LHWs (25%) and participants of advocacy events with community based activists (5%).

During P17, ASD just like Cluster meeting was the lowest achiever in terms of target achieved. Only 9% targeted audience was approached and imparted BBC activities by ASD. Whereas in Merlin supported districts, highest number of people were provided awareness regarding preventive and curative services utilization



Achievements 2015

1. DOMC sustained its grant rating above “A” which is carried out by Global Fund on quarterly basis.
2. DOMC sustained delivery of services to the patients during the period when SRs were not onboard in April to June 2015
3. Save the Children (SC) also withdrew as PR from 21 districts during P-16. DOMC was given the status of sole PR due to the excellent performance which was an acknowledgement by the relevant quarters i.e. ministry, CCM, WHO, LFA and GF that the current team has full capacity to run the malaria grant in all the districts if additional expertise of Save the Children are added.
4. In spite of huge uncertainties and decline by Save the Children core team to join DOMC, the current team managed to successfully perform following additional tasks (not included in the work plan) in addition to the routine grant activities to ensure un-interrupted delivery of services during P 15 & 16 and onwards
5. The API of Dadu was brought down to <5 by effective malaria control intervention. Dadu was handed over to Provincial Malaria Control Program as a success story to sustain low endemicity.
6. The MOU with WHO for the provision of Technical Assistance (TA) expired on 31st March 2015. An Amendment No. 2 was signed on 19th October 2015 between WHO and DOMC to extend the MOU from 1st April 2015 to 31st December 2015 for sustained technical support
7. Development of grant making documents
8. Capacity assessment of 09 Sub-Recipient Organizations
9. Preparation of work plan & PF for all 09 SRs
10. Grant signing with SRs immediately after the grant signing by the Global Fund with DOMC.
11. Regular On Site Data Verification & Routine Services Quality Audit activities
12. CCM oversight visit
13. Successful conduction of MESST workshop
14. Arranging series of meetings of the Technical Working Group for development of HSS Concept note, which has been successfully approved by Technical Review Panel.
15. Commemoration of World Malaria Day at Provincial and National level.
16. The process for the updating of various guidelines initiated during 2015 in P-16.
17. Due to the continuous hard working and sustained motivation of PMU team all the activities were streamlined. All the Performance Frame Work indicators of DOMC were achieved by over 85%.