

State wise Epidemiological Status

Andhra Pradesh

Table: 1. Year wise Epidemiological Indicators(1998-2008) in Andhra Pradesh

Year	ABER	API	SPR	SFR
1998	12.86	1.81	1.41	0.73
1999	12.95	1.94	1.5	0.91
2000	13.54	1.17	0.87	0.5
2001	12.17	0.85	0.7	0.41
2002	12.42	0.54	0.44	0.25
2003	14.41	0.51	0.36	0.21
2004	13.82	0.5	0.36	0.2
2005	14.04	0.55	0.39	0.22
2006	13.15	0.47	0.36	0.22
2007	12.31	0.38	0.31	0.19
2008	12.22	0.36	0.3	0.18

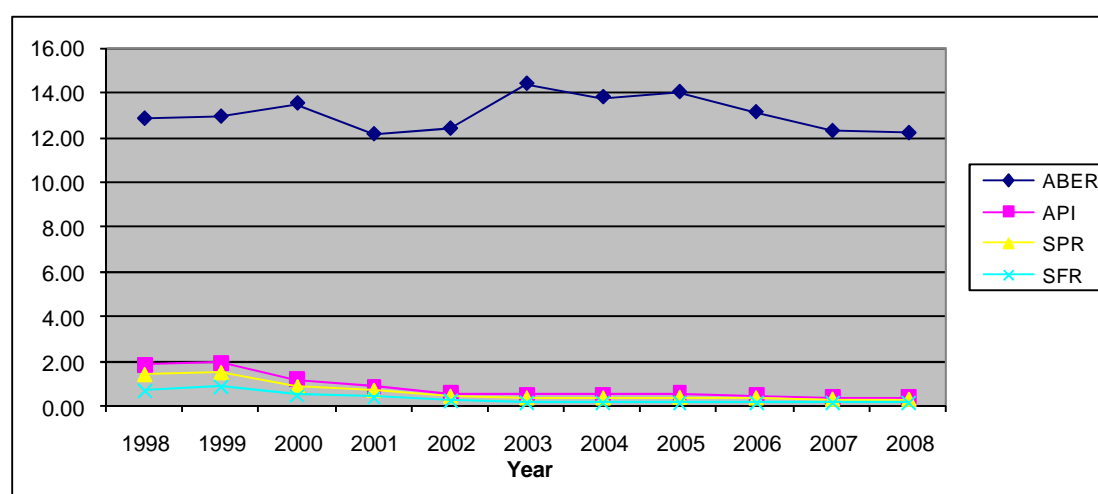


Figure 1. Trends of Malarionetric Indicators in Andhra Pradesh

The trends of ABER, API, SPR, SFR during the period from 1998 to till 2008 are presented in Table 1. and fig. 1 for the State of Andhra Pradesh. It shows that the ABER has remained more than 10 suggesting adequate surveillance activities in the State. The API has continuously declined from 1.81 to 0.36, SPR declined from 1.41 to 0.3 and SFR has also decreased from 0.73 in 1998 to 0.18 in 2008. The Pf proportion was 60.4% and it has been reported more than 80% in seven out of 26 districts in 2008. East Godavari, Vishakhapatnam and Khammam are the districts reporting highest caseload in the State. No deaths have been reported from any of the districts in the State.

Arunachal Pradesh

Table: 2. Year wise Epidemiological Indicators (1998-2008) in Arunachal Pradesh

Year	ABER	API	SPR	SFR
1998	44.31	65.98	14.89	2.08
1999	41.32	62.56	15.14	2.67
2000	29.03	45.35	15.62	2.36
2001	31.53	53.01	16.81	3.31
2002	29.43	43.97	14.94	2.28
2003	26.03	32.93	2.13	12.65
2004	20.2	28.27	14	2.06
2005	24.5	29.53	12.05	2.88
2006	26.14	37.1	14.19	4.66
2007	23.25	30.37	13.06	3.48
2008	23.76	26.58	11.19	2.82

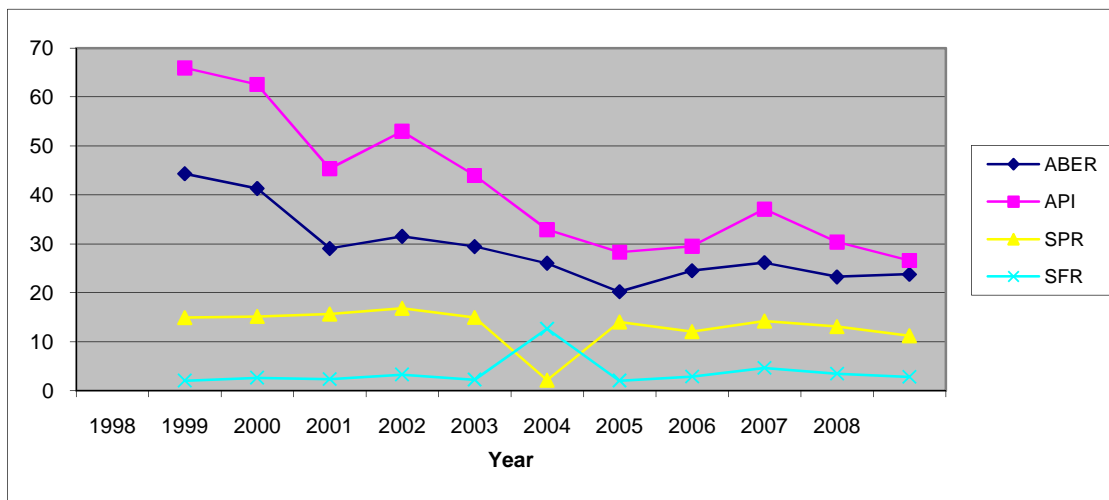


Figure 2. Trends of Malariometric Indicators in Arunachal Pradesh

Arunachal Pradesh is state with difficult hilly terrains, sparse populations and long distances to cover. The epidemiological indicators (Table 2 and Fig. 2) ABER, API and SPR though high are showing declining trend. The ABER has remained more than 20% suggesting adequate surveillance. The contribution of Pf malaria is 23%, therefore, the reported mortality is less compared to Meghalaya. During 2006 the large number of deaths were reported and these have since declined and during the year 2008 and no death due to malaria has been recorded in the state. East Siang, Upper Subansiri, East Kameng and L/D/ Valley, K/ Kumey are the districts having high API during 2008. West Kameng, Lower Subansiri, Anjaw and U.D.Valley are the areas having lower API compared to other districts and the ABER has also been reported lowest in these districts suggesting need of increasing surveillance in these districts looking at the large difference in API between the two groups.

Assam

Table: 3. Year wise Epidemiological Indicators (1998-2008) in Assam

Year	ABER	API	SPR	SFR
1998	9.34	3.62	3.88	2.24
1999	10.78	4.92	4.56	2.89
2000	8.23	3.16	3.83	2.35
2001	8.9	3.48	3.91	2.42
2002	8.38	3.23	3.85	2.4
2003	7.66	2.75	2.28	3.59
2004	6.45	2.02	3.14	2.23
2005	7.07	2.34	3.31	2.22
2006	9.35	4.3	4.6	3.01
2007	8.16	3.2	3.92	2.71
2008	8.9	2.83	3.18	2.21



Figure 3. Trends of Malarionetric Indicators in Assam

The numbers of total cases and Pf cases have declined in Assam but the Pf proportion is increasing. The ABER has remained around 7 to 10 during the last ten years (Table 3 Fig.3). There were serious outbreaks with high mortality related to Pf Malaria in 2006 in Lakhimpur, Karbi-Anglong, Golaghat and Kamrup districts. Over all, the Pf percentage is 69.4% in the State but 14 out of 27 districts are reporting Pf % more than 75%. Despite upsurge in malaria cases during 2006 there has been over all declines in slide positivity rate from 3.88 to 3.18 and in SfR from 2.24 to 2.21. The slide falciparum rate is more than 2 in 6 districts of the State. Karbi-Anglong district reported 38 deaths out of 76 deaths reported in the State in 2008.

Bihar

Table: 4. Year wise Epidemiological Indicators (1998-2008) in Bihar

Year	ABER	API	SPR	SFR
1998	1.13	1.12	9.86	6.5
1999	1.1	1.25	11.41	6.91
2000	0.48	0.12	2.44	0.53
2001	0.44	0.05	1.54	0.29
2002	0.49	0.04	0.91	0.42
2003	0.43	0.03	0.73	0.3
2004	0.33	0.02	0.65	0.11
2005	0.26	0.03	1.19	0.19
2006	0.27	0.03	1.14	0.18
2007	0.15	0.02	1.11	0.47
2008	4.08	0.01	0.7	0.09

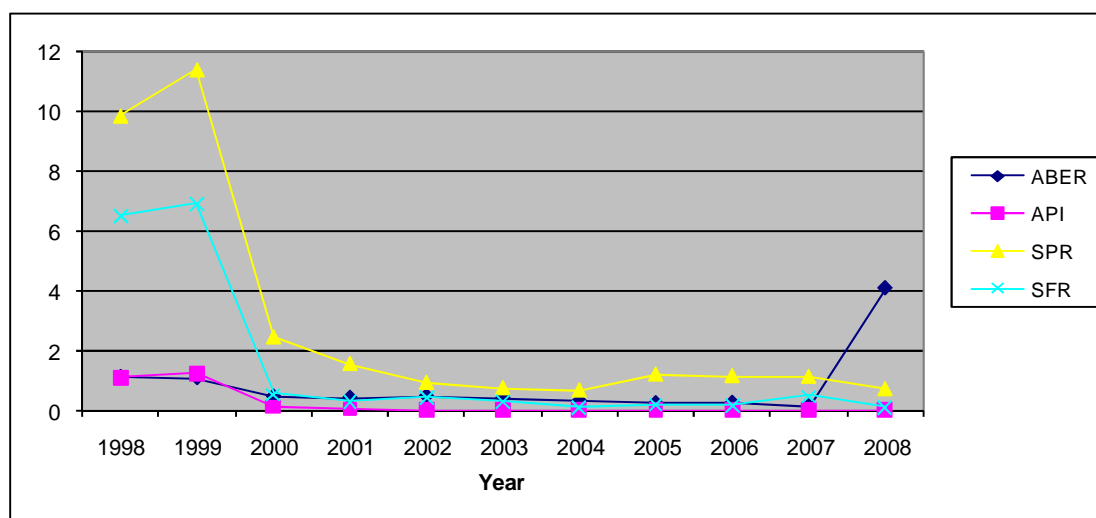


Figure 4. Trends of Malario-metric Indicators in Bihar

Bihar is a low endemic State and reporting continuous declines in the number of cases and so the API. The surveillance is also very poor reflected by very low ABER in the State. Interestingly the increased ABER in 2008 is not able to increase the API suggesting low endemicity as a real status. Aurangabad, Rohtas and Jamuie are the districts reporting the highest number of cases in the State.

Chhatisgarh

Table: 5. Year wise Epidemiological Indicators (1998-2008) in Chhatisgarh

Year	ABER	API	SPR	SFR
2000	18.7	16.33	8.73	5.99
2001	17.79	1.89	7.25	7.03
2002	15.27	10.21	6.68	4.84
2003	15.74	8.28	5.26	3.9
2004	15.33	8.28	5.4	4.12
2005	16.51	8.01	4.85	3.62
2006	15.63	7.9	5.05	3.92
2007	14.27	6.01	4.21	2.94
2008	12.39	5.03	4.06	3.12

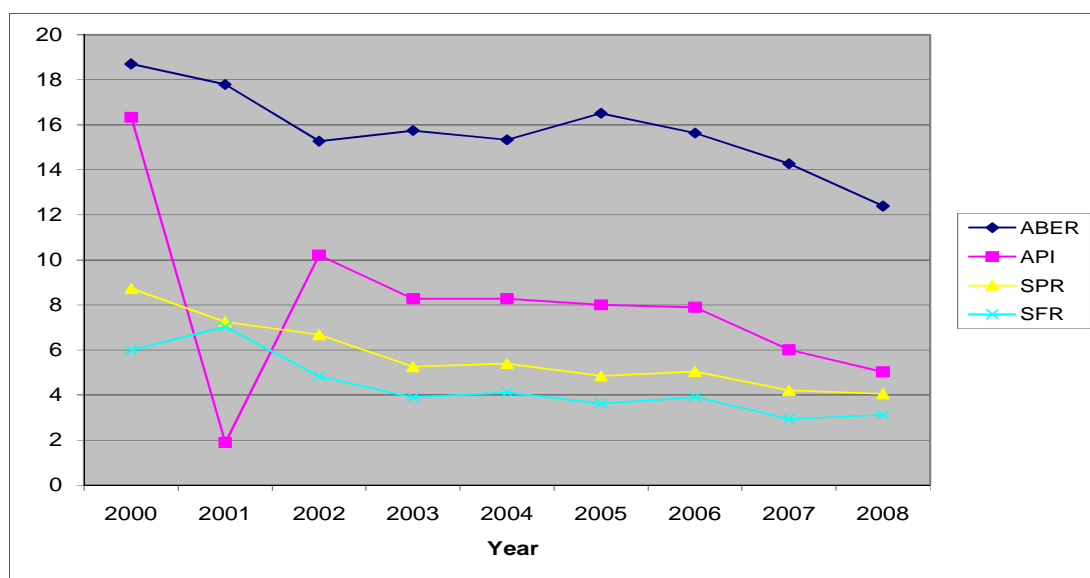


Figure 5. Trends of Malarionetric Indicators in Chhatisgarh

The epidemiological indicators (Table 5 and Fig. 5) ABER, API and SPR though high are showing declining trend in Chhatisgarh. The ABER has remained more than 12% suggesting adequate surveillance. The contribution of Pf malaria is 76.6% in total cases. The districts of the state namely Korba, Ambikapur, Korea, Jaspurnagar, Bastar, Dantevada and Kanker are the districts having API >5 during 2008. It is one of the States which are going to be covered under the New World Bank aided project. So the district preparedness activities are initiated in the State in 2008. Kanker will be the pilot district for the study under the project where BCC interventions will be carried out.

Goa

Table: 6. Year wise Epidemiological Indicators (1998-2008) in Goa

Year	ABER	API	SPR	SFR
1998	22.38	19.68	8.79	2.94
1999	22.62	11.65	5.15	1.86
2000	21.31	6.94	3.26	0.92
2001	21.01	9.34	4.45	1.29
2002	20.71	12.74	6.15	1.34
2003	21.11	8.61	4.08	0.59
2004	18.11	5.94	3.28	0.62
2005	18.4	2.61	1.42	0.18
2006	19.36	3.49	1.8	0.43
2007	24.76	6.79	2.74	0.86
2008	27.67	6.84	2.47	0.69

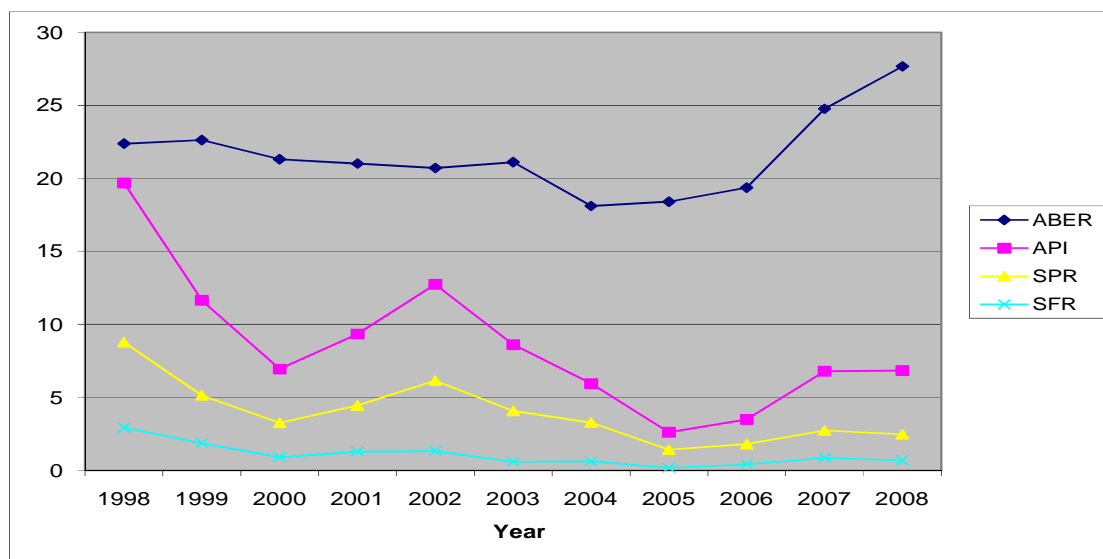


Figure 6. Trends of Malarionetric Indicators in Goa

The epidemiological indicators (Table 6 and Fig. 6) in Goa show that the ABER has remained more than 18. API and SPR though high are showing declining trend. Increasing surveillance reflected by increasing ABER is showing increasing API in last three years. The contribution of Pf malaria is 27.8% in total cases. North Goa district is having API of 9.28 during 2008. 21 deaths have been reported in the State out of which 13 were in North Goa. The state has started malaria elimination project from the year 2008.

Gujarat

Table: 7 Year wise Epidemiological Indicators (1998-2008) in Gujarat

Year	ABER	API	SPR	SFR
1998	15.28	2.29	1.5	0.26
1999	13.78	1.36	0.98	0.16
2000	12.88	0.76	0.59	0.11
2001	13.89	1.61	1.16	0.27
2002	13.11	1.62	1.16	0.23
2003	15.84	2.48	1.57	0.38
2004	18.02	4.11	2.28	0.68
2005	19.93	3.25	1.63	0.3
2006	19.69	1.5	0.81	0.16
2007	16.46	1.23	0.75	0.19
2008	15.37	0.86	0.56	0.13

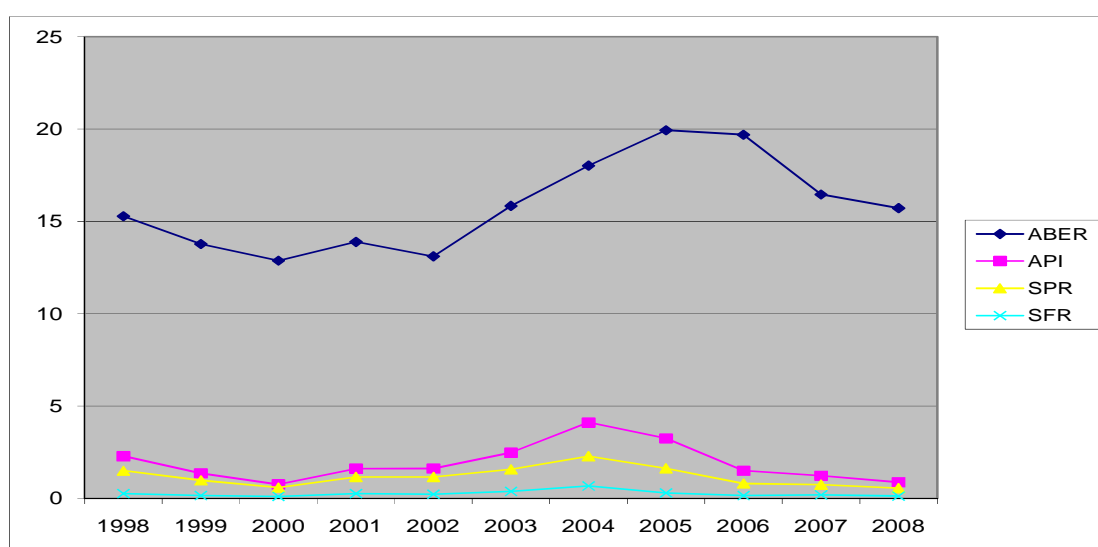


Figure 7. Trends of Malarionetric Indicators in Gujarat

The Table 7 and Fig. 7 show that the ABER has remained more than 12 in the last ten years in Gujarat. API and SPR are showing declining trend with peak during 2004. The Pf % is 22.9% of total cases. 7 district is having API >1 during 2008 and among them the highest three are Jamnagar (2.1), Kuchh (1.94) and Ahmedabad Urban (1.28). 36 deaths have been reported in the State out of which 24 were in Ahmedabad Urban. Due to high industrial development in the state there is high level of migration of the labour population from other states particularly from endemic states like Orissa. So there is potential danger of likelihood of epidemics

Haryana

Table: 8 Year wise Epidemiological Indicators (1998-2008) in Haryana

Year	ABER	API	SPR	SFR
1998	11.44	0.61	0.53	0.01
1999	10.89	0.13	0.12	0.01
2000	10.49	0.05	0.05	0.01
2001	10.8	0.06	0.05	0.01
2002	9.66	0.04	0.05	0
2003	10.67	0.2	0.19	0.02
2004	9.86	0.45	0.46	0.01
2005	11.27	1.48	1.32	0.01
2006	11.71	2.1	1.79	0.02
2007	10.8	1.37	1.27	0.01
2008	12.26	1.7	1.39	0.05

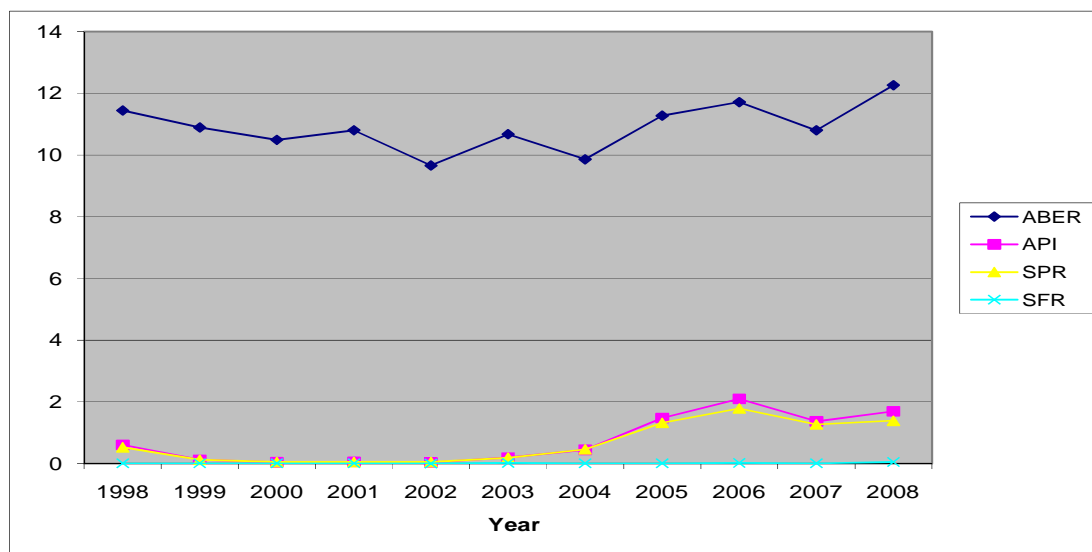


Figure 8. Trends of Malarionetric Indicators in Haryana

The Table 8 and Fig. 8 show that the ABER has remained more than 10 in most of the last ten years. API and SPR are showing increasing trend for last four years with peak during 2006. The Pf % is 3.9% of total cases. 3 districts (Hissar, Jind and Yamunanagar have reported API >5 during 2008. No death has been reported in the State. Highest AFI (3.83) is reported from Yamunanagar, while rest all districts are showing very low AFI.

Himachal Pradesh

Table: 9. Year wise Epidemiological Indicators (1998-2008) in Himachal Pradesh

Year	ABER	API	SPR	SFR
1998	13.94	0.32	0.23	0
1999	13.73	0.15	0.11	0
2000	12.5	0.11	0.08	0
2001	12	0.07	0.06	0
2002	10.99	0.04	0.03	0
2003	10.32	0.03	0.03	0
2004	9.86	0.45	0.46	0.01
2005	9.65	0.03	0.03	0
2006	9.29	0.02	0.02	0
2007	9.1	0.02	0.02	0
2008	7.67	0.03	0.04	0

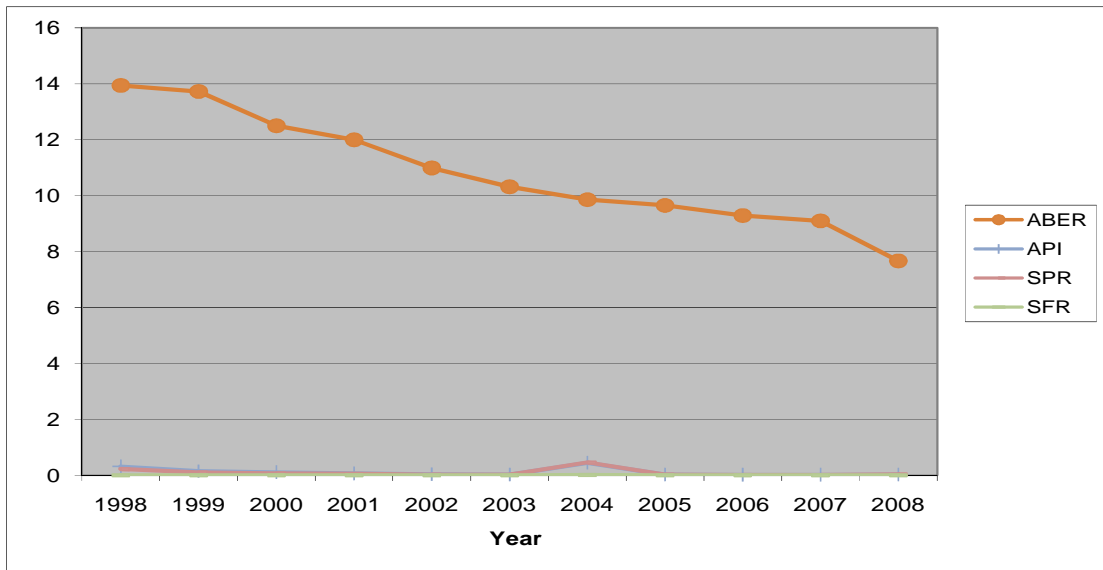


Figure 9. Trends of Malarionetric Indicators in Himachal Pradesh

The Table 9 and Fig. 9 show the trends of various indicators in Himachal Pradesh. ABER has remained more than 9 up to 2007. API has remained less than 0.4 in last ten years with peak during 2004. The Pf % is 1.39% of total cases. Only 2 Pf cases were reported out of total 144 in 2008. No death has been reported in the State.

Jammu & Kashmir

Table: 10. Year wise Epidemiological Indicators (1998-2008) in Jammu & Kashmir

Year	ABER	API	SPR	SFR
1998	9.47	1.42	1.50	0.00
1999	9.07	0.90	0.99	0.01
2000	8.41	0.71	0.85	0.01
2001	8.00	0.21	0.27	0.01
2002	7.72	0.10	0.13	0.00
2003	7.26	0.06	0.09	0
2004	7.3	0.05	0.07	0
2005	7.38	0.05	0.07	0
2006	8.3	0.03	0.04	0
2007	7.68	0.05	0.06	0
2008	8.04	0.04	0.05	0

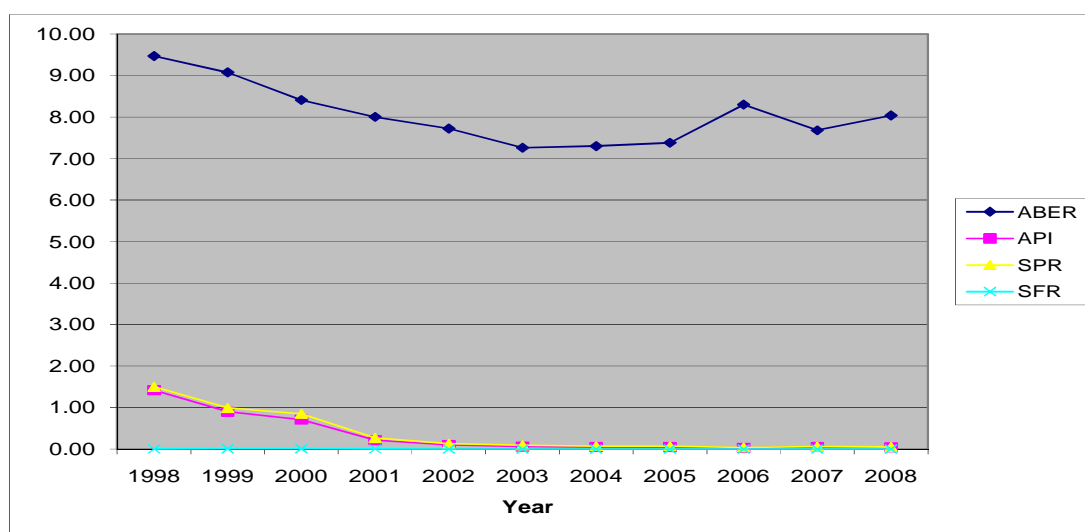


Figure 10. Trends of Malarionetric Indicators in Jammu & Kashmir

In Jammu & Kashmir the ABER has ranged from 7 to 9.47 (Table 10 and Fig. 10). API has remained less than 0.5 from 2004 onwards. The Pf % is 8.5% of total cases. Only 17 Pf cases were reported out of total 200 in 2008. One death has been reported in the State in 2008.

Jharkhand

Table: 11 Year wise Epidemiological Indicators (1998-2008) in Jharkhand

Year	ABER	API	SPR	SFR
2000	3.65	5.25	14.39	7.41
2001	3.4	5.02	14.77	7.17
2002	3.15	4.75	15.08	6.3
2003	2.64	4.42	16.75	5.28
2004	4.78	5.26	11	3.39
2005	10.08	6.84	6.78	1.82
2006	7.12	6.59	9.25	2.31
2007	6.66	6.15	9.23	2.29
2008	8.42	7.07	8.4	2.93

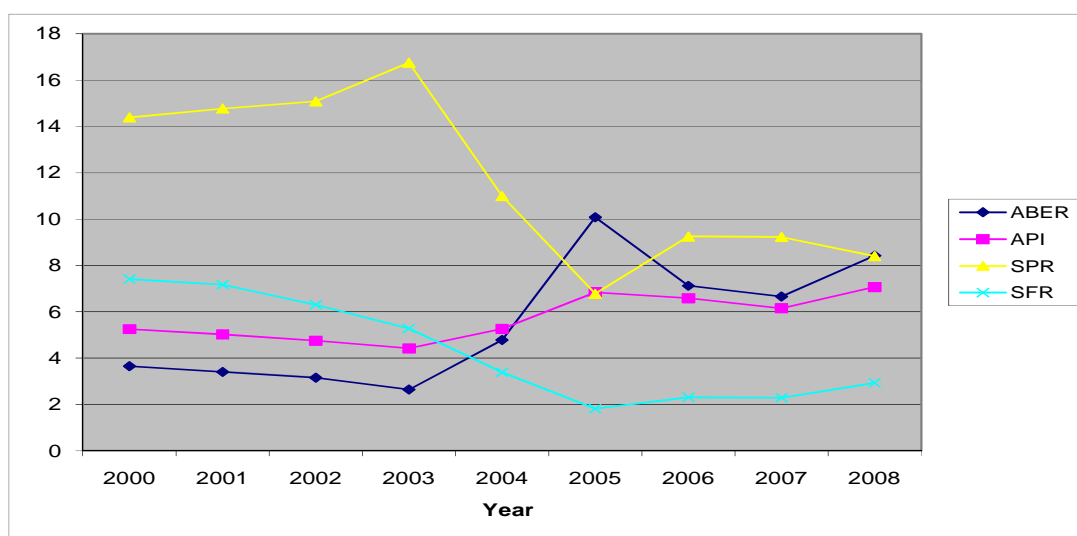


Figure 11. Trends of Malarionetric Indicators in Jharkhand

This state has demonstrated steady improvement in surveillance indicated by improvement in ABER from 3.15 in 2002 to 8.42 in 2008. With additional inputs the state has demonstrated decline in the Slide positivity rate from 15.08 in 2002 to 8.4 in 2008. The SFR has also declined from 6.3 in 2002 to 2.93 in 2008. The highest API was reported in Latehar (33.68) followed by Palamau(19) and West Singbhum(18.7). Godda district reported 13 deaths out of 25 reported in State. Looking to the high Pf Proportion, the low level of reported mortality indicates that surveillance needs strengthening. The increase in number of cases and also in Pf cases is pointing towards the increased need of efforts to contain the morbidity due to malaria in this State. Most of its districts are covered under the GFATM or World Bank project for increased input in these districts.

Karnataka

Table: 12. Year wise Epidemiological Indicators (1998-2008) in Karnataka

Year	ABER	API	SPR	SFR
1998	17.7	2.78	1.57	0.35
1999	18.58	2.21	1.19	0.26
2000	17.02	2.28	1.34	0.35
2001	18.09	3.93	2.17	0.53
2002	18.46	2.6	1.41	0.32
2003	18.9	1.94	1.03	0.24
2004	17.65	1.56	0.88	0.22
2005	19.36	1.6	0.83	0.22
2006	18.91	1.2	0.63	0.17
2007	16.79	0.93	0.56	0.13
2008	15.51	0.84	0.54	0.11

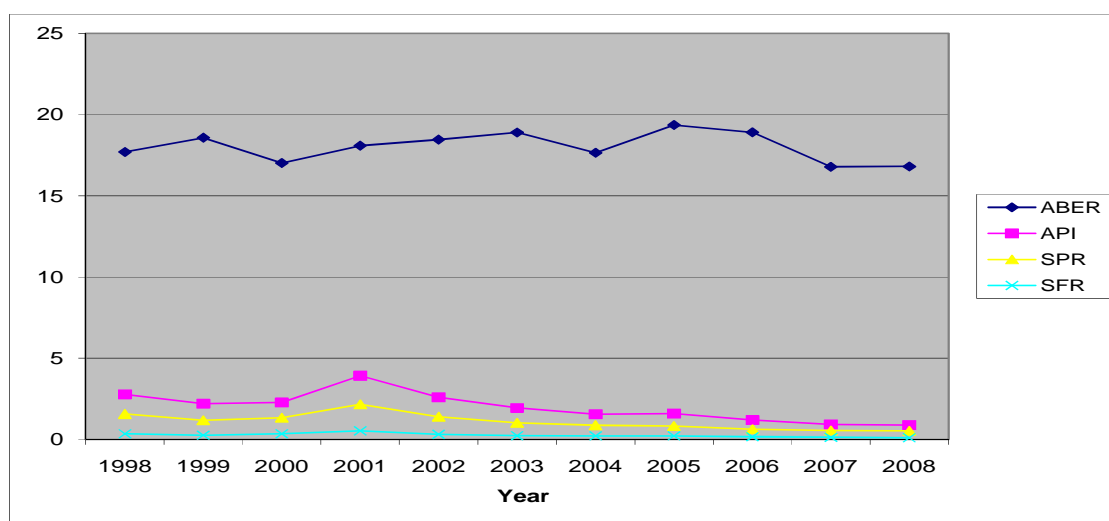


Figure 12. Trends of Malarionetric Indicators in Karnataka

Table 12 and Fig 12 shows that, though the ABER has remained more than 16 in last ten years in Karnataka, the API, SPR and SFR are having continuous decline. The Pf proportion is 20.84% in 2008. A.M.U. Almatti has reported highest (7.7) API, followed by U.K.P Narayanpur(5.6) and Raichur (3.35). However, highest numbers of cases have been reported from Gulbarg (7152), Raichur (6361) and Dakshina Kannada (5734). Total seven deaths have been reported in the State in 2008.

Kerala

Table: 13. Year wise Epidemiological Indicators (1998-2008) in Kerala

Year	ABER	API	SPR	SFR
1998	4.42	0.23	0.53	0.08
1999	5.08	0.16	0.31	0.03
2000	7.02	2.28	1.34	0.35
2001	5.42	0.07	0.13	0.02
2002	4.65	0.11	0.23	0.03
2003	5.79	0.08	0.14	0.02
2004	5.39	0.16	0.02	0.03
2005	6.4	0.08	0.12	0.02
2006	5.95	0.06	0.11	0.02
2007	5.79	0.06	0.1	0.02
2008	5.41	0.05	0.1	0.01

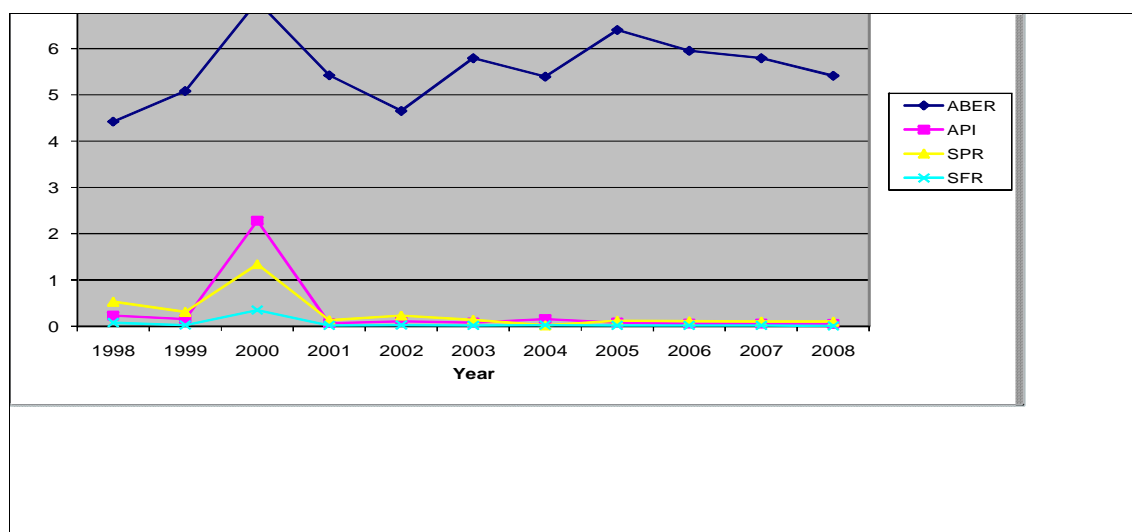


Figure 13. Trends of Malarionetric Indicators in Kerala

In the State of Kerala the ABER has remained less than seven in last ten years. API has also remained less than 0.1 in most of the last ten years with peak reported in 2000 . Pf proportion has been 12.03% in 2008. Highest number of cases (246) were reported in Malappuram followed by Kannur(211). SPR has also remained less than 0.2 in most of the districts.

Madhya Pradesh

Table: 14. Year wise Epidemiological Indicators (1998-2008) in Madhya Pradesh

Year	ABER	API	SPR	SFR
1998	13.56	6.03	4.45	2.31
1999	13.88	6.54	4.71	2.58
2000	13.38	3.21	2.4	0.77
2001	13.96	2.94	2.11	0.7
2002	13.59	1.71	1.26	0.36
2003	13.78	1.53	1.11	0.35
2004	13.59	1.97	1.45	0.57
2005	13.13	1.52	1.56	0.36
2006	14.39	1.42	0.99	0.3
2007	13.22	1.31	0.99	0.40
2008	13.11	1.49	1.13	0.46

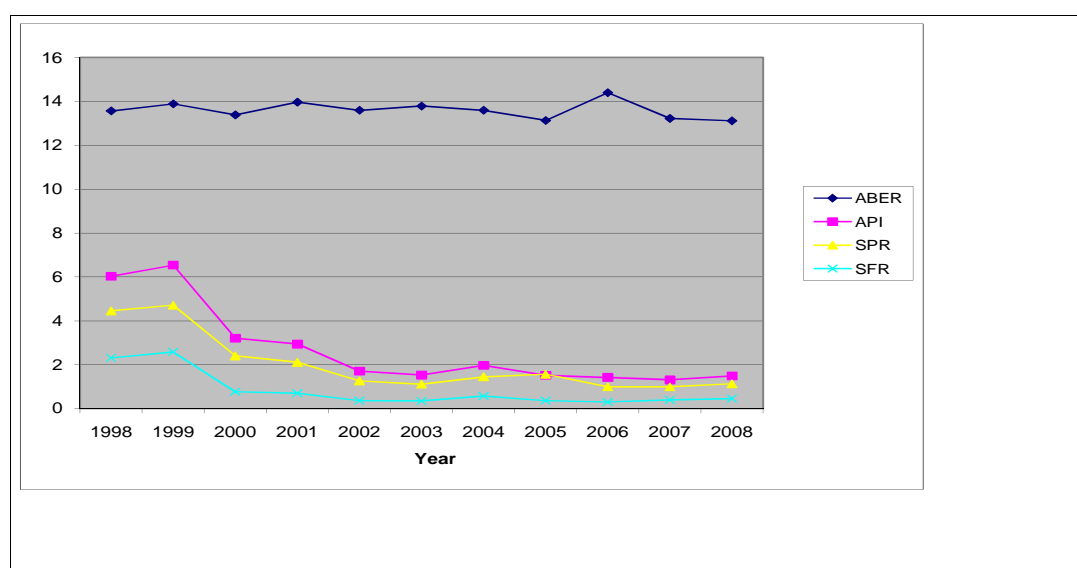


Figure 14. Trends of Malarionetric Indicators in Madhya Pradesh

In Madhya Pradesh, the ABER has remained more than 13 in last ten years suggesting continuous surveillance in last years. However, the API SPR and SFR are having continuous decline up to 2007, but there was a marginal increase in 2008 due to epidemics reported in three of the districts. The Pf proportion was 40.1% in 2008. Sheopur, Ashoknagar and Bhind are the districts reporting highest API in the State. 9 out of 48 districts of the State have reported Pf proportion more than 60%. 10 deaths have been reported from Shivpuri where an epidemic of malaria was reported in Aug. 2008 which was immediately controlled with the combined efforts of officials at all levels.

Maharashtra

Table: 15. Year wise Epidemiological Indicators (1998-2008) in Maharashtra

Year	ABER	API	SPR	SFR
1998	16.15	1.83	1.13	0.33
1999	16.55	1.49	0.9	0.22
2000	16.44	0.86	0.53	0.17
2001	14.77	0.58	0.39	0.14
2002	14.29	0.46	0.32	0.1
2003	14.26	0.62	0.43	0.21
2004	14.14	0.66	0.47	0.2
2005	13.28	0.42	0.31	0.11
2006	16.23	0.52	0.32	0.1
2007	12.6	0.63	0.5	0.17
2008	12.3	0.63	0.51	0.17

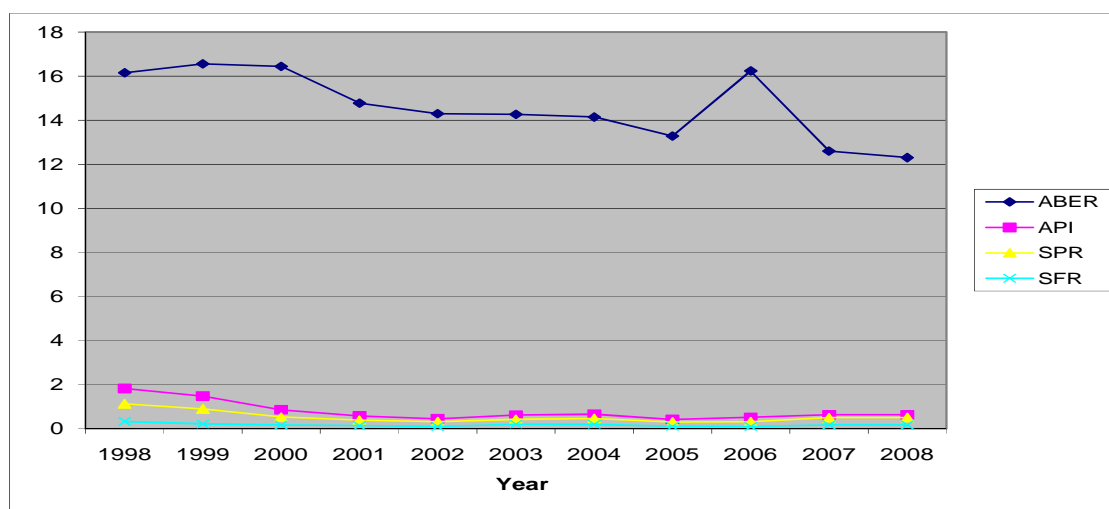


Figure 15. Trends of Malarionetric Indicators in Maharashtra

The ABER is reported more than 12 during the last ten years in Maharashtra. The API was lowest (0.4) in 2004, but thereafter it is having marginally increasing trend and in 2008 it was 0.63. The API was highest (10.48) in Gadchroli. The other district having API more than 1 was Greater Mumbai. Rests are having very low API. The Pf proportion in 2008 was 33%. Total of 164 deaths have been reported in the State out of which 113 were from G. Mumbai.

Manipur

Table: 16 Year wise Epidemiological Indicators (1998-2008) in Manipur

Year	ABER	API	SPR	SFR
1998	6.06	0.59	0.97	0.47
1999	7.38	1.2	1.63	0.86
2000	4.89	0.47	0.96	0.34
2001	4.37	0.39	0.9	0.36
2002	4.14	0.51	1.24	0.59
2003	5.85	1.01	1.73	0.78
2004	5.84	1.01	1.77	0.5
2005	5.55	0.81	1.46	0.54
2006	3.56	1.02	2.86	1.38
2007	4.36	0.43	0.99	0.33
2008	4.86	0.26	0.53	0.26

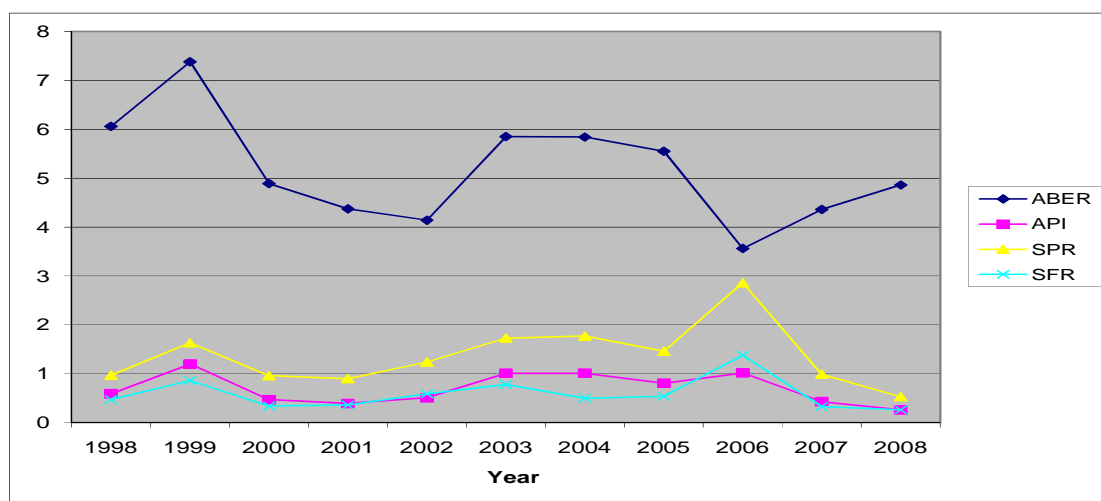


Figure 16. Trends of Malarionetric Indicators in Manipur

The malarionetric indicators for the state of Manipur in 2008 are shown in Table 16 and Fig 16. It shows that they are having declining trend. The ABER has remained very low. Pf percentage is 50% in the State. However, three districts are reporting high Pf % (more than 75%). The State API has remained less than one for last two years. Highest API (2.24) was reported from Jirbam S/D district while rest all were having less than 1 API. There is a need to increase the surveillance as ABER is very low in the state compared to other near by states.

Meghalaya

Table: 17. Year wise Epidemiological Indicators (1998-2008) in Meghalaya

Year	ABER	API	SPR	SFR
1998	11.31	8.38	7.41	3.58
1999	10.02	6.81	6.79	4.2
2000	8.62	6.29	7.3	4.92
2001	10.94	9.14	8.35	6.43
2002	11.52	8.77	7.61	4.71
2003	8.63	7.96	9.22	6.2
2004	9.41	7.84	8.33	7.15
2005	9.48	7.29	7.69	6.75
2006	12.58	12.98	10.31	8.93
2007	14.32	15.76	11	9.31
2008	14.47	16.57	11.45	10.5

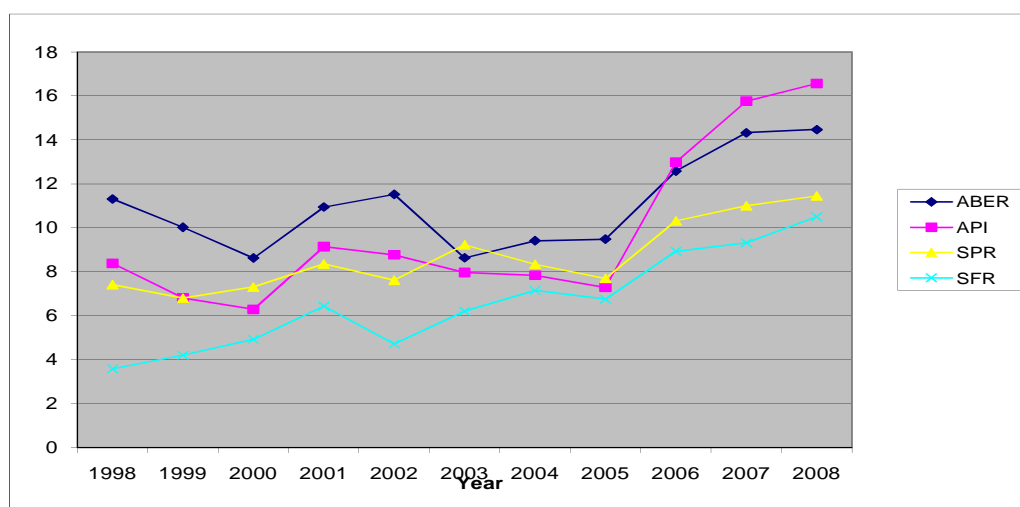


Figure 17. Trends of Malarionetric Indicators in Meghalaya

The Table 17 and Fig. 17 show that the number of Total cases and Pf cases are having increasing trend reflected by increasing API and SFR. The disease burden has increased which was in part due to poor reporting and slack surveillance during the years 2003 to 2005. With improved and increased surveillance as indicated by the improvement in ABER, the reported cases more than doubled in 2008 as compared to 2002. However, now the decline is expected as the treatment has been provided to these cases which will reduce the parasite load in the community.

The malaria infection is predominantly of Pf (92%). Central and state level teams visited the district West Garo Hills during the month of January 2008, which was

contributing highest disease burden (49% deaths due to malaria) of the state. During 2007 specific action plans were developed and the high level of surveillance was maintained and additional focused inputs (RDKs) at the village level were provided which included training of community volunteers and supply of effective anti-malarial. These special efforts have resulted in decline of deaths in the district from 237 in 2007 to 73 during 2008. Mobilization of ASHA (Community volunteers) also helped in controlling the mortality. However, there is a further need to strengthen the anti-malarial services including the prevention measures like personal protection

Mizoram

Table: 18. Year wise Epidemiological Indicators (1998-2008) in Mizoram

Year	ABER	API	SPR	SFR
1998	27.37	13.57	4.96	3.14
1999	37.95	19.28	5.08	3.37
2000	27.55	11.67	4.24	2.51
2001	25.37	13.56	5.34	2.91
2002	26.97	9.67	3.58	1.79
2003	22.33	8.05	3.61	2.06
2004	23.99	8.64	3.60	1.92
2005	24.17	11.86	4.91	2.87
2006	24.07	11.07	4.89	3.27
2007	15.72	6.21	3.95	2.72
2008	16.89	7.46	4.41	3.73

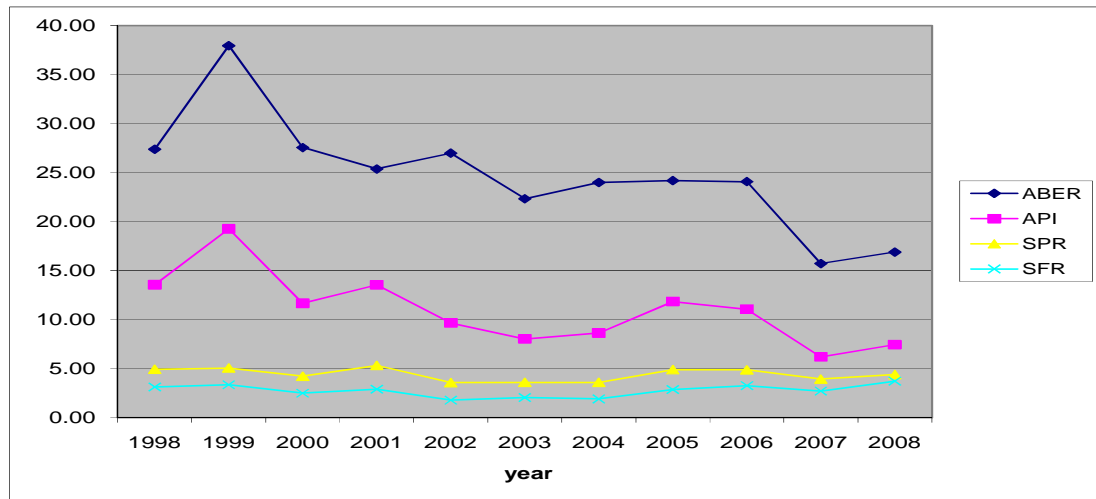


Figure 18. Trends of Malarionetric Indicators in Mizoram

Table 18 and Fig. 18 show that in Mizoram, the slide collection has decreased and the ABER has declined from 26.97 to 16.89. The slide positivity rate has increased from 3.58 during 2002 to 4.41 and Sfr from 1.79 during 2002 to 3.73 during 2008. The Pf % has increased from 50 to 84%. The API is having declining trend; however it is till more than five. High API is reported from 4 districts namely Kolasib, Mamit, Sahia and Lunglei.

Nagaland

Table: 19 Year wise Epidemiological Indicators (1998-2008) in Nagaland

Year	ABER	API	SPR	SFR
1998	3.97	1.38	3.47	0.74
1999	3.62	3	8.3	0.38
2000	3.3	2.34	7.09	0.54
2001	2.78	2.71	7.82	0.9
2002	3.01	1.98	6.06	0.39
2003	3.33	1.69	5.06	0.42
2004	3.74	1.38	3.68	0.19
2005	4.79	1.65	2.45	0.11
2006	5.09	1.86	3.66	0.55
2007	5.42	2.18	4.02	0.67
2008	8.34	3.48	4.17	0.6

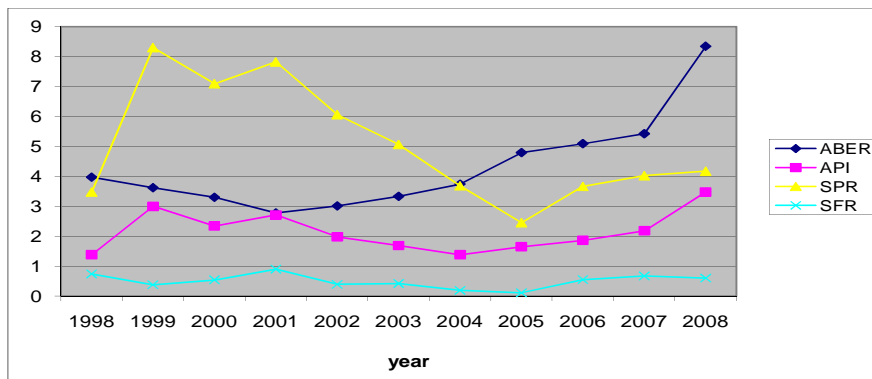


Figure 19. Trends of Malarionetric Indicators in Nagaland

The Nagaland state is an example of decline in reported population due to emigration. Steady improvement in surveillance indicated by improvement in ABER from 3.01 to 8.34, during the period from 2002 till 2008 (Table 19 and Fig.19) and with additional inputs the state has demonstrated decline in the Slide positivity rate from 6.60 in 2002 to 4.17 in 2008. However, the total number of cases and Pf cases are showing increasing trends which suggest need of further inputs in the State. The Pf proportion is having increasing trend, but it has remained less than 15%. Peren and U.M.S. Dimapur are having Pf proportion more than 60%

Orissa

Table: 20. Year wise Epidemiological Indicators (1998-2008) in Orissa

Year	ABER	API	SPR	SFR
1998	10.82	13.13	12.14	10.38
1999	10.48	13	12.4	10.47
2000	11.28	13.41	11.89	9.99
2001	10.66	11.75	11.02	9.2
2002	12.19	12.62	12.35	8.61
2003	11.73	11.15	9.51	7.91
2004	11.32	10.79	9.54	8.05
2005	12.36	10.11	8.18	7.07
2006	12.64	9.69	7.67	6.69
2007	12.24	9.21	7.52	6.53
2008	12.10	8.9	7.36	6.43

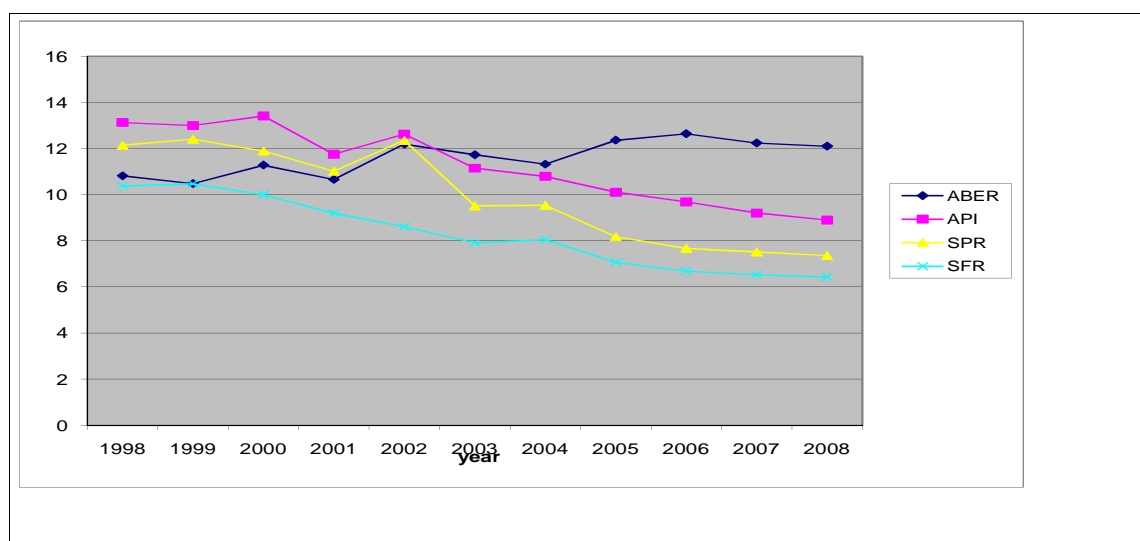


Figure 20. Trends of Malarionetric Indicators in Orissa

This is another state which is endemic for Pf malaria and has demonstrated decline in Total and Pf malaria cases. However, the Pf proportion is increasing. The ABER has remained high (>12) suggesting good surveillance. There has been decline in API (12.6 in 2002 to 8.9 in 2008). High Pf percentage (above 75%) is being reported in 18 out of the 30 districts. During the year 2008, 218 deaths have been reported, out of which 49 were from Phulbani and 23 from Keonjhar. Most of the districts of this state are covered under GFATM and World Bank projects with additional inputs to increase the surveillance, supervision and monitoring.

Punjab

Table: 21. Year wise Epidemiological Indicators (1998-2008) in Punjab

Year	ABER	API	SPR	SFR
1998	11.86	0.23	0.19	0
1999	11.47	0.05	0.04	0
2000	10.48	0.02	0.02	0
2001	11.24	0.02	0.02	0
2002	10.8	0.01	0.01	0
2003	10.53	0.02	0.01	0
2004	9.58	0.06	0.07	0
2005	10.58	0.07	0.07	0
2006	9.79	0.07	0.07	0
2007	10.22	0.08	0.07	0
2008	11.18	0.09	0.08	0

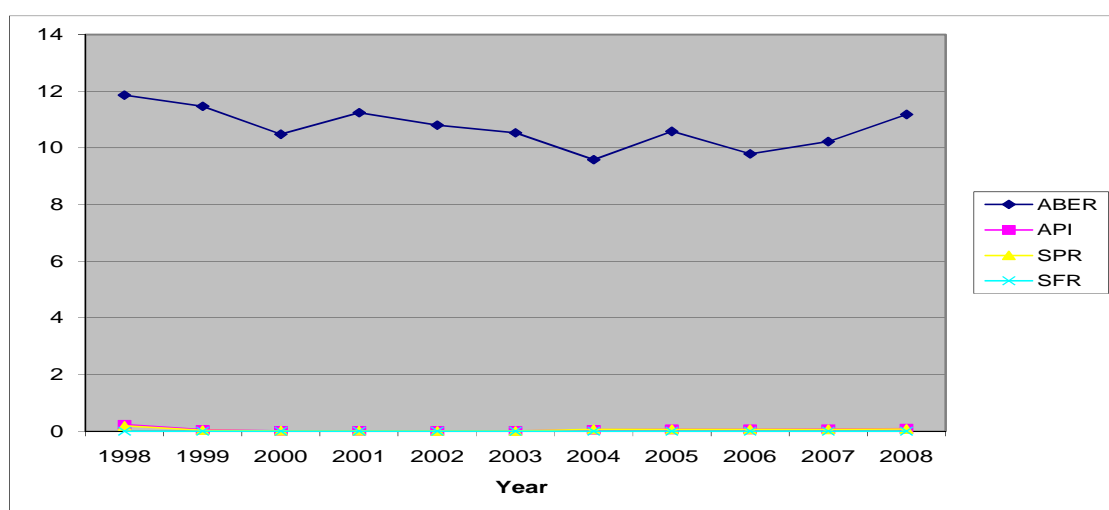


Figure 21. Trends of Malariometric Indicators in Punjab

Trends of ABER, API, SPR and SFR of Punjab state is presented in the Table-21 and Fig. 21. ABER has gradually declined from 11.86 in the year 1998 to 9.79 in the year 2006, but it again picked up during the year 2008, which indicates increased surveillance in the state. The API and SFR are declined respectively from 1998 to 2008. The declined SPR shows improvement in malaria situation. The Pf proportion is 1.52 %. Highest API reported in the State was from Faridkot 0.79.

Rajasthan

Table: 22 Year wise Epidemiological Indicators(1998-2008) in Rajasthan

Year	ABER	API	SPR	SFR
1998	11.31	1.74	1.54	0.2
1999	11.57	1.18	1.02	0.11
2000	11.29	0.82	0.72	0.07
2001	15.33	2.94	1.92	0.26
2002	10.08	1.22	1.21	0.09
2003	13.87	2.53	1.82	0.21
2004	12.8	1.85	1.45	0.1
2005	12.42	0.92	0.74	0.06
2006	9.79	0.07	0.07	0
2007	12.52	0.97	0.78	0.05
2008	14.19	1.01	0.71	0.05

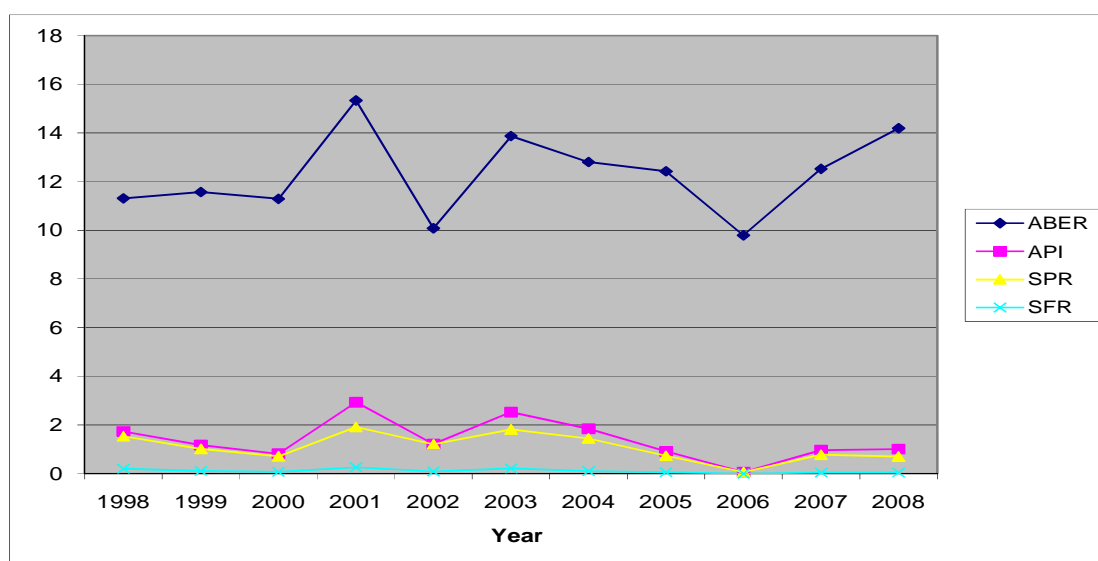


Figure 22. Trends of Malarionetric Indicators in Rajasthan

Table 22 and Figure 22 show Trends of ABER, API, SPR and SFR of Rajasthan state. ABER has gradually increased from 11.31 in the year 1998 to 14.19 in the year 2008, which indicates increased surveillance in the state. The SFR are declined respectively from (0.2) in 1998 to (0.05) in 2008 and API also declined from (1.74) in the year 1998 to (1.01) in 2008. The declined SPR shows improvement in malaria situation. The Pf proportion in 2008 is 6.88%. 54 deaths have been reported in 2008 in the State the highest being in Alwar. Jaisalmer and Hanumangarh are districts which have reported API more than 2. Rest all are reporting API less than 2.

Sikkim

Table :-23 Year wise Epidemiological Indicators(1998-2008) in Sikkim

Year	ABER	API	SPR	SFR
1998	11.01	0.12	0.1	0.01
1999	9.81	0.11	0.11	0.02
2000	9.4	0.12	0.13	0.01
2001	7.96	0.23	0.29	0.12
2002	9.8	0.38	0.39	0.05
2003	6.94	1.97	2.84	0.42
2004	6.45	1.1	1.71	0.35
2005	5.62	0.47	0.83	0.37
2006	5.23	0.61	1.17	0.39
2007	3.84	0.29	0.77	0.11
2008	3.78	0.23	0.62	0.16

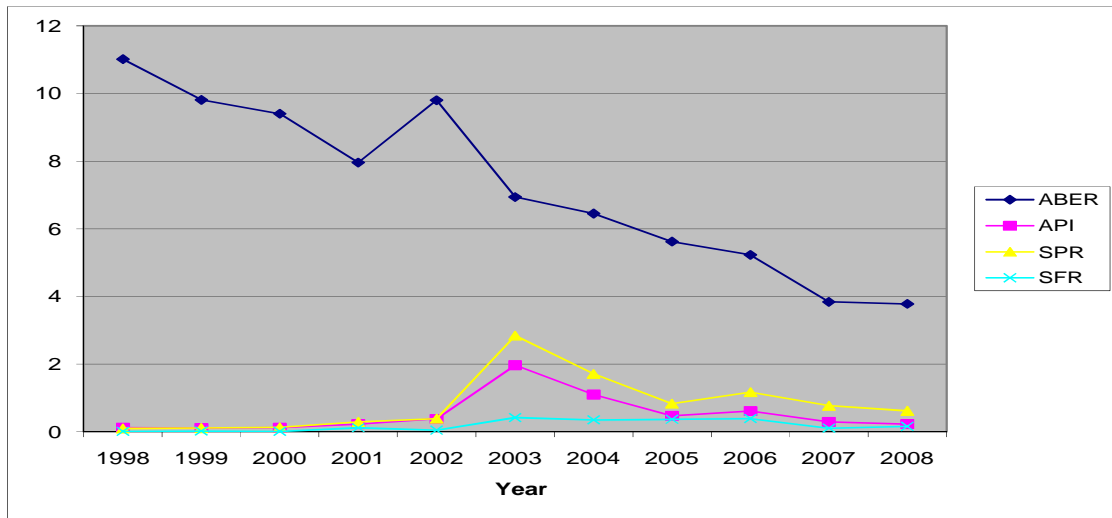


Figure 23. Trends of Malarionetric Indicators in Sikkim

The above table shows that the Annual Blood Slide Examination Rate has declined from 11.01 in 1998 to 3.78 in 2008. Suggesting decreased surveillance activities. The SPR has also decreased from 2.84 in 2003 to 0.62 in 2008 indicating improvement in malaria situation in the state, while API and SFR is also decreased in 1998 to 2008 respectively. Out of 38 malaria cases reported in the State, 28 were from East Sikkim. No deaths have been reported but the Pf proportion is 26.32%

Tamil Nadu

Table: 24. Year wise Epidemiological Indicators (1998-2008) in Tamil Nadu

Year	ABER	API	SPR	SFR
1998	12.08	1.02	0.84	0.03
1999	12.16	0.92	0.76	0.03
2000	11.41	0.69	0.61	0.02
2001	11.33	0.51	0.45	0.02
2002	11.4	0.55	0.48	0.04
2003	12.14	0.69	0.56	0.05
2004	11.52	0.65	0.56	0.04
2005	11.85	0.61	0.51	0.04
2006	9.67	0.43	0.44	0.02
2007	8.7	0.34	0.39	0.02
2008	8.58	0.41	0.48	0.02

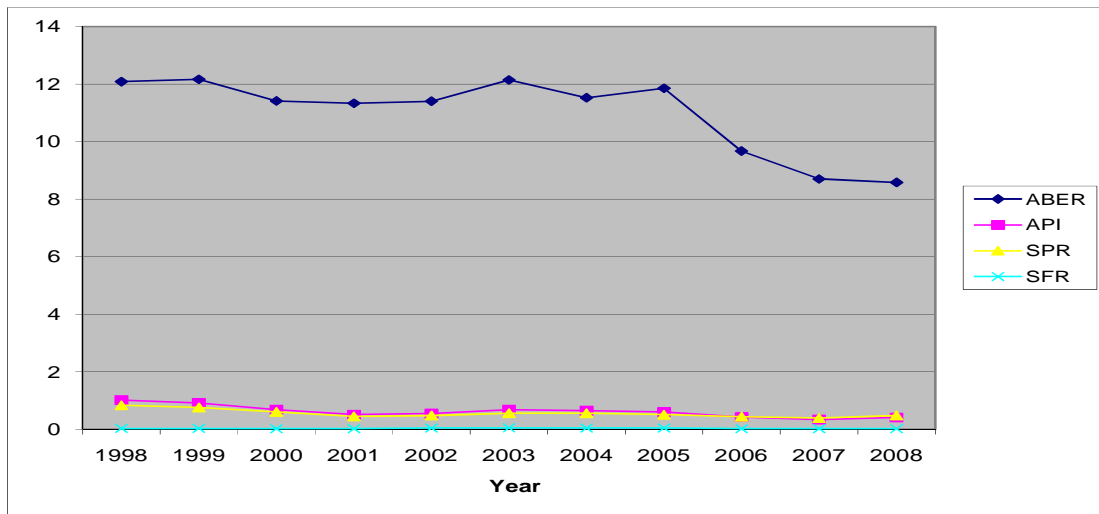


Figure 24. Trends of Malarimetric Indicators in Tamil Nadu

Table 24 and **Figure 24** shows Trends of ABER, API, SPR and SFR of Tamilnadu state. ABER has gradually declined from 12.08 in the year 1998 to 8.58 in 2008 which indicates decreased surveillance in the state. The SFR are declined respectively from 0.03 in 1998 to 0.02 in 2008 and API and SPR also declined during the decade. The declined SPR shows improvement in malaria situation. The Pf proportion is 4.18 only. Chennai Corporation and Ramnathpuram are the districts having API >2. Rest all have reported API less than one. No death has been recorded in the State.

Tripura

Table: 25 Year wise Epidemiological Indicators (1998-2008) in Tripura

Year	ABER	API	SPR	SFR
1998	7.04	3.83	5.44	4.54
1999	6.43	4.37	6.79	5.61
2000	6.11	3.66	5.99	4.64
2001	9.14	5.8	6.34	5.02
2002	7.69	4.17	5.43	4.43
2003	7.91	4.33	5.47	4.28
2004	7.72	5.37	6.95	6.05
2005	8.55	5.3	6.2	4.91
2006	9.32	7.08	7.6	5.2
2007	8.07	5.29	6.56	5.65
2008	9.57	7.29	7.61	6.82

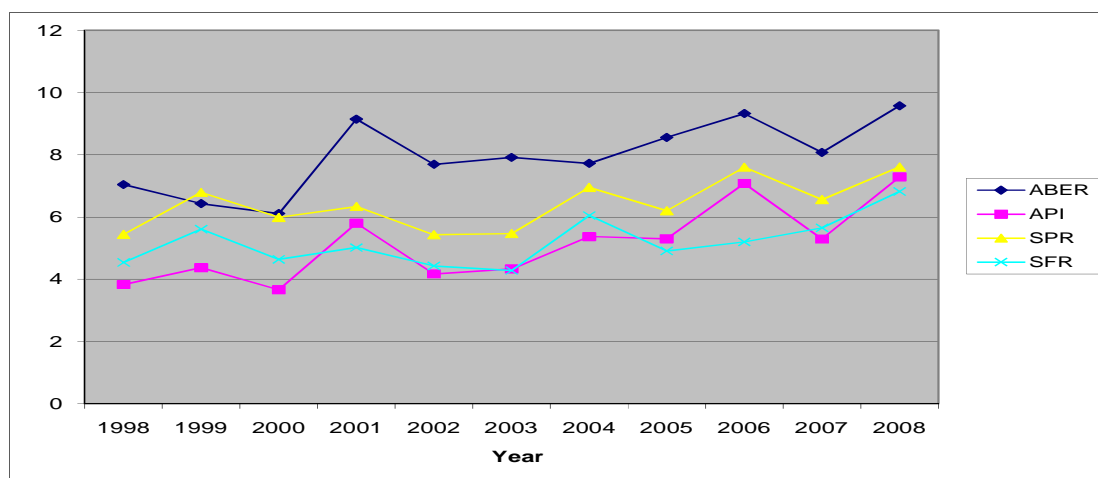


Figure 25. Trends of Malarionetric Indicators in Tripura

This state is a Pf predominant area (Pf% > 80% during the period) and all the districts have Pf% more than 84%. South Tripura and Dhalai Tripura are the districts reporting high disease burden. There is improved surveillance, which is reflected in improved ABER from 7.69 in 2002 to 9.57 in 2008), the SPR has also increased from (5.43 in 2002 to 7.61). However, the number of reported cases (and so API) is having increasing trend (Table 11,12 and Fig. 10) which is a matter for concern. 46 deaths have also been reported in 2008 and all the districts have reported deaths in 2008.

Uttarakhand

Table: 26. Year wise Epidemiological Indicators (1998-2008) in Uttarakhand

Year	ABER	API	SPR	SFR
2000	1.75	0.24	1.35	0.29
2001	1.52	0.14	0.93	0.22
2002	3.43	0.2	0.57	0.04
2003	4.02	0.03	0.69	0.08
2004	3.77	0.14	0.38	0.01
2005	3.5	0.14	0.4	0.01
2006	3.12	0.12	0.38	0
2007	2.51	0.1	0.41	0
2008	2.47	0.12	0.47	0.02

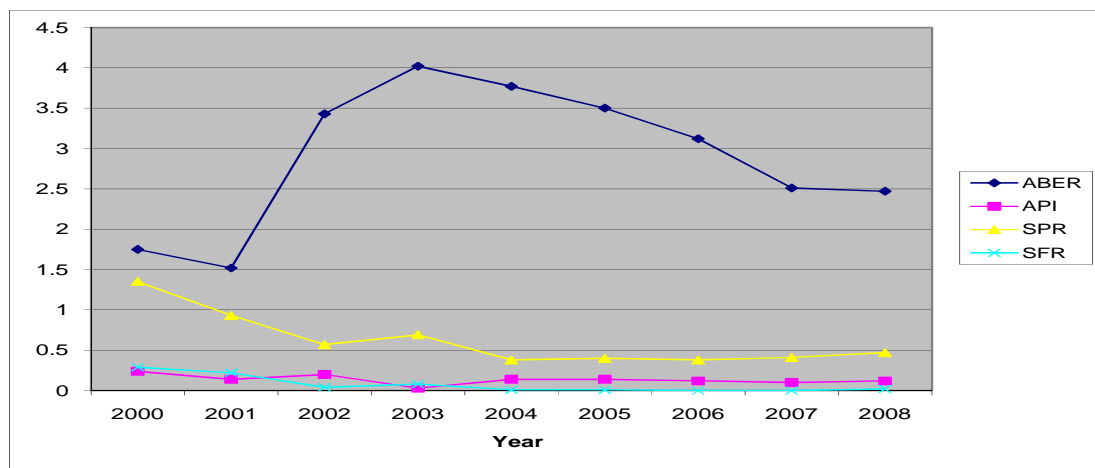


Figure 26. Trends of Malarionetric Indicators in Uttarakhand

Trends of ABER, API, SPR and SFR of Uttarakhand state is presented in the **Table-26** and **Fig.-26**. ABER has gradually increased from 1.75 in the year 2000 to 2.47 in the year 2008, which indicates increased surveillance in the state. The API, SPR and SFR are having declining trend. 4.44 % Pf proportion has been reported in 2008. Most of the cases are reported from Udhamasingnagar (623), Nainital (202) and Haridwar (105) out of total 1059 cases reported in the State in 2008. No deaths have been reported in 2008.

Uttar Pradesh

Table: 27. Year wise Epidemiological Indicators (1998-2008) in Uttar Pradesh

Year	ABER	API	SPR	SFR
1998	5.5	0.79	1.44	0.07
1999	2.83	0.67	2.38	0.15
2000	1.38	0.67	4.82	0.31
2001	2.02	0.64	3.17	0.15
2002	2.92	0.59	2.01	0.06
2003	0.24	0.67	2.06	0.05
2004	2.73	0.57	2.08	0.05
2005	2.35	0.59	2.49	0.07
2006	2.17	0.51	2.35	0.05
2007	2	0.47	2.37	0.06
2008	2.38	0.54	2.25	0.06

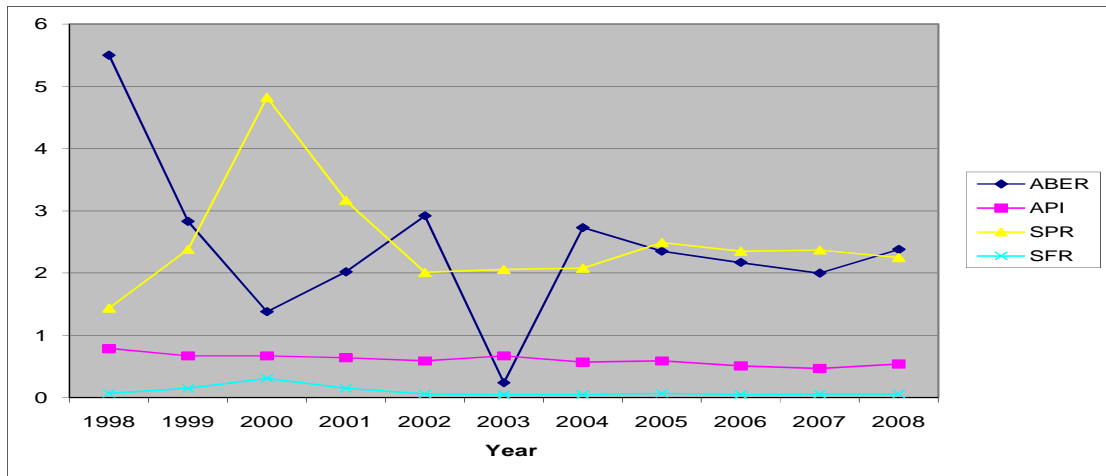


Figure 27. Trends of Malarionetric Indicators in Uttar Pradesh

Table 7 and **Figure 7** shows Trends of ABER, API, SPR and SFR of Uttar Pradesh state. ABER has gradually declined from 5.5 in the year 1998 to 2.38 in the year 2008 which indicates declined surveillance in the state. The SFR, API and SPR also having overall declining trend. Pf proportion is 2.47% only. Most of the cases are reported from Sonbhadra (22985) and Mirzapur (12416) out of total 93383 cases reported in 2008 in the State. No deaths have been reported from the State in 2008. An epidemic was reported from Kanpur Dehat in the year 2008.

West Bengal

Table :-28 Year wise Epidemiological Indicators(1998-2008) in West Bengal

Year	ABER	API	SPR	SFR
1998	3.9	2.12	5.44	1.04
1999	3.51	2.77	7.89	2.52
2000	3.62	1.76	4.87	1.09
2001	4.09	1.76	4.31	1.26
2002	4.7	2.34	4.99	1.56
2003	5.04	2.78	5.53	1.82
2004	4.5	2.6	5.78	1.58
2005	5.51	2.32	0.53	0.94
2006	6.16	1.87	3.03	0.82
2007	5.63	1.06	1.88	0.47
2008	5.38	1.27	2.35	0.54

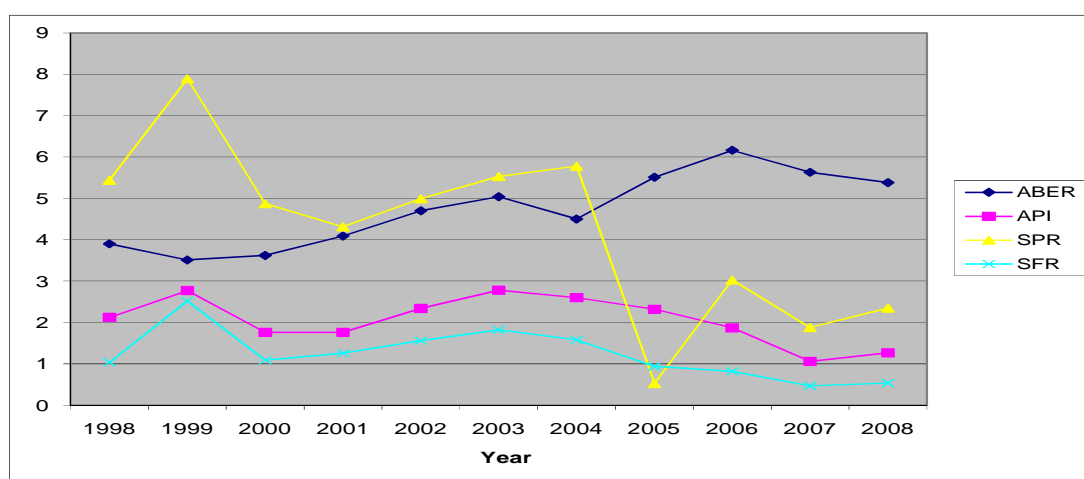


Figure 28. Trends of Malariometric Indicators in West Bengal

Trends of ABER, API, SPR and SFR of West Bengal state is presented in the Table-8 and Fig.-8. ABER has gradually increased from 3.9 in the year 1998 to 5.38 in the year 2008. The API, SPR and SFR are having declining trend. Kolkata Muni. Corporation reported highest case load (49,957) followed by Kolkata urban, Jalpaiguri, purulia and Medinipore(west). Bankura, Purulia and Medinipore districts reported most of the deaths out of total 101 deaths reported in the state in 2008. Purulia an Bankura reported highest Pf Proportion (>75%) in the state.

A & N Island

Table: 29. Year wise Epidemiological Indicators (1998-2008) in A & N Island

Year	ABER	API	SPR	SFR
1998	50.53	2.75	0.54	0.08
1999	54.75	2.06	0.38	0.07
2000	57.1	2.2	0.39	0.09
2001	53.99	2.03	0.38	0.07
2002	44.42	1.9	0.43	0.08
2003	43.04	1.95	0.45	0.09
2004	38.86	1.87	0.48	0.08
2005	31.83	9.91	3.11	1.63
2006	29.86	6.77	2.27	0.98
2007	33.46	8.99	2.69	1.51
2008	33.03	10.58	3.13	2.12

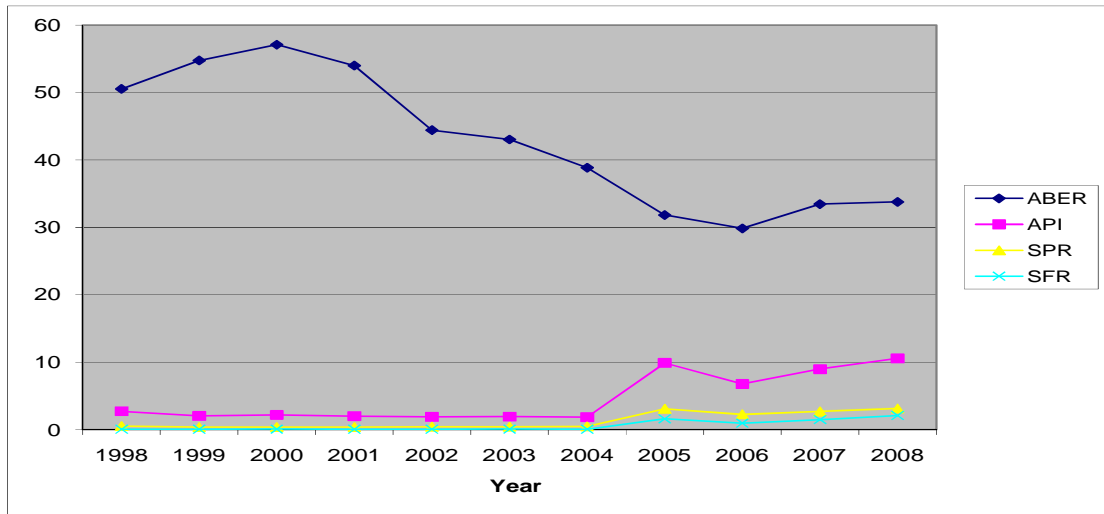


Figure 29. Trends of Malarionetric Indicators in A & N Island

Table 29 and **Figure 29** shows Trends of ABER, API, SPR and SFR of A&N Island state. ABER has decreased from 50.53 in the year 1998 to 33.03 in the year 2008. The API has increased from 2.75 in the year 1998 to 10.58 in 2008. Pf proportion is 67%, the highest being 75.9% in Nicobar where the ABER was 134 and the API was 85.43 in 2008. Interestingly, no death has been reported in the island.

Chandigarh

Table: 30. Year wise Epidemiological Indicators (1998-2008) in Chandigarh

Year	ABER	API	SPR	SFR
1998	11.94	2.26	1.9	0.01
1999	11.36	0.6	0.53	0.02
2000	9.63	0.33	0.34	0.01
2001	9.8	0.37	0.38	0
2002	8.01	0.17	0.22	0.01
2003	9.11	0.09	0.1	0.01
2004	7.7	0.21	0.27	0.01
2005	9.46	0.44	0.47	0.01
2006	7.75	0.46	0.59	0.01
2007	8.76	0.34	0.39	0
2008	7.77	0.35	0.45	0.01

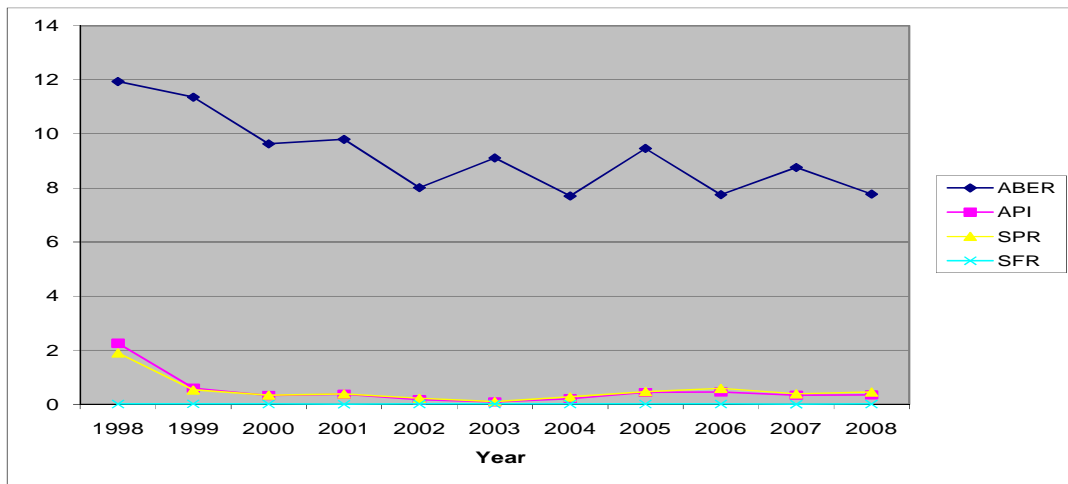


Figure 30. Trends of Malarionetric Indicators in Chandigarh

Table 30 and **Figure 30** shows Trends of ABER, API, SPR and SFR of Chandigarh UT.. ABER has decreased from 11.94 in the year 1998 to 7.77 in the year 2008 which indicates declined surveillance in the state . The API, and SPR are also having declining trend. Total 347 cases were detected in 2008, out of which only 6 were Pf cases.

D & N Haveli

Table: 31. Year wise Epidemiological Indicators (1998-2008) in D & N Haveli

Year	ABER	API	SPR	SFR
1998	24.39	38.19	15.66	6.78
1999	19.87	20.26	10.2	2
2000	16.41	13.13	8	0.93
2001	16.01	3.85	2.41	0.17
2002	13.72	0.45	1.63	0.33
2003	13.29	1.85	1.39	0.32
2004	12.04	2.63	2.19	0.56
2005	16.61	3.9	2.35	0.37
2006	40.57	11.76	2.9	0
2007	20.5	13.31	6.49	2.18
2008	18.24	10.69	5.86	1.92

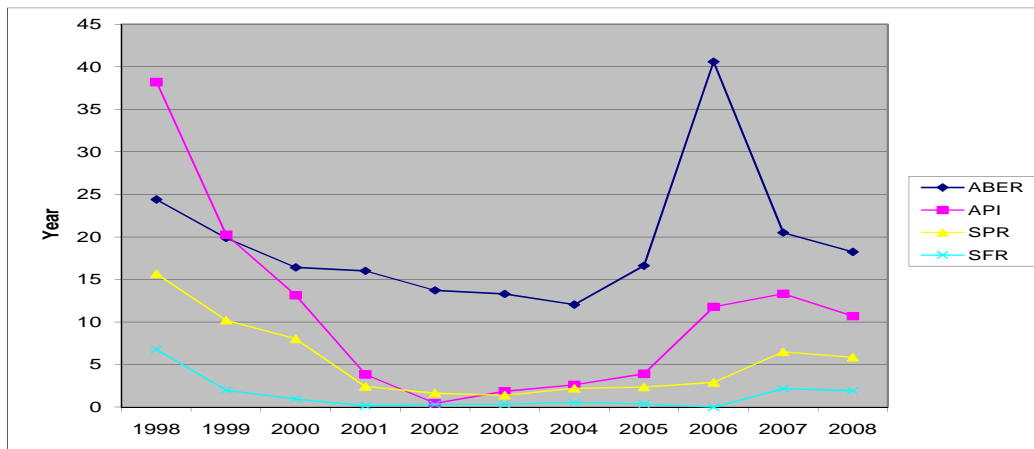


Figure 31. Trends of Malarionetric Indicators in D & N Haveli

Trends of ABER, API, SPR and SFR of **D&N Haveli** state is presented in the **Table-31** and **Fig.-31** ABER has gradually declined from 24.39 in the year 1998 to 18.24 in the year 2008. The API is was having declining trend till 2002 when it has reached to 0.45 but thereafter it is having increasing trend and increased up to 10.69 in 2008. The SPR and SFR are having declining trends. The Pf proportion was 32.76% but no death has been reported from this UT.

Daman & Diu

Table: 32. Year wise Epidemiological Indicators (1998-2008) in Daman & Diu

Year	ABER	API	SPR	SFR
1998	26.47	5.43	2.05	0.06
1999	24.12	3.06	1.27	0.13
2000	24.46	1.06	0.44	0.02
2001	14.37	0.55	0.38	0.1
2002	14.3	1.08	0.76	0.14
2003	13.36	0.87	0.65	0.1
2004	12.38	0.72	0.58	0.09
2005	10.89	0.6	0.56	0.09
2006	16.8	0.81	0.48	0.07
2007	15.38	0.58	0.37	0.06
2008	15.79	0.67	0.42	0.07

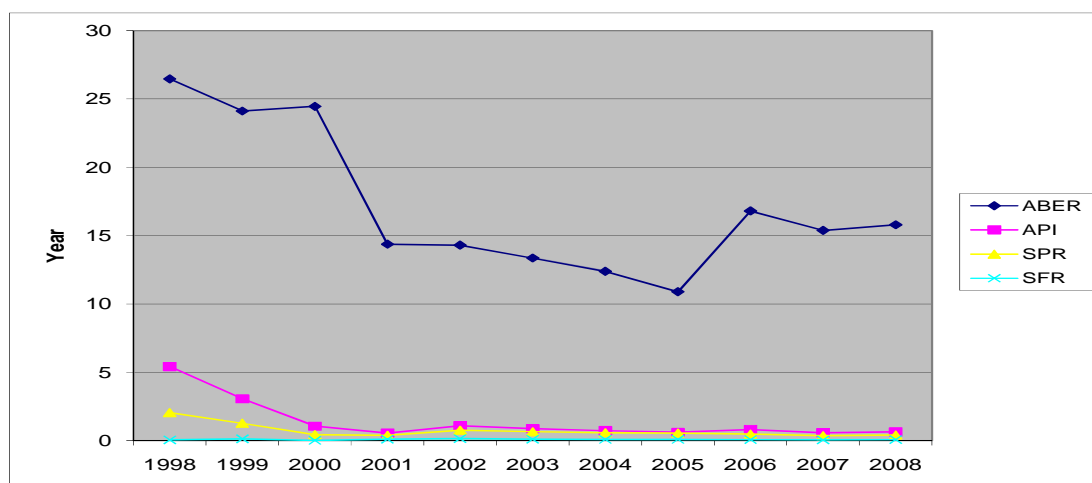


Figure 32. Trends of Malarionetric Indicators in Daman & Diu

Trends of ABER, API, SPR and SFR of **Daman & Diu** state is presented in the **Table-32** and **Fig.-32**. ABER has gradually declined from 26.47 in the year 1998 to 15.79 in the year 2008. The API and SPR are also showing declining trends. Out of 115 cases reported in 2008, Pf cases were 19.

Delhi

Table: 33. Year wise Epidemiological Indicators (1998-2008) in Delhi

Year	ABER	API	SPR	SFR
1998	8.28	0.33	0.4	0
1999	8	0.32	0.4	0.02
2000	8.6	0.21	0.24	0.02
2001	8.3	0.11	0.14	0
2002	8.3	0.05	0.06	0
2003	8.71	0.06	0.07	0
2004	7.34	0.09	0.13	0
2005	7.36	0.08	0.11	0.01
2006	6.23	0.06	0.10	0
2007	4.43	0.01	0.03	0
2008	3.94	0.02	0.04	0

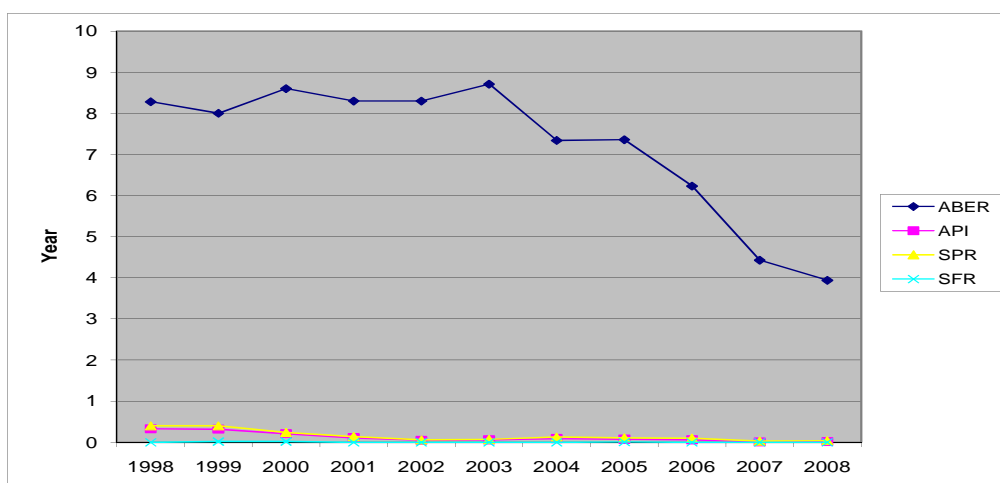


Figure 33. Trends of Malarionetric Indicators in Delhi

Trends of ABER, API, SPR and SFR of **Delhi state** is presented in the **Table-33** and **Fig.-33**. ABER has gradually declined from 8.28 in the year 1998 to 3.94 in the year 2008. The API, SFR and SPR is also having declining trend in the decade. Total 253 cases were reported in 2008 out of which there was no Pf case and no death reported.

Lakshadweep

Table: 34. Year wise Epidemiological Indicators (1998-2008) in Lakshadweep

Year	ABER	API	SPR	SFR
1998	5.83	0.08	0.13	0
1999	7.26	0.02	0.03	0
2000	7.99	0.1	0.12	0
2001	3.12	0	0	0
2002	3.1	0.13	0.42	0
2003	3.11	0.1	0.32	0
2004	2.42	0.03	0.14	0
2005	1.33	0	0	0
2006	2.31	0	0	0
2007	0.7	0	0	0
2008	0.72	0	0	0

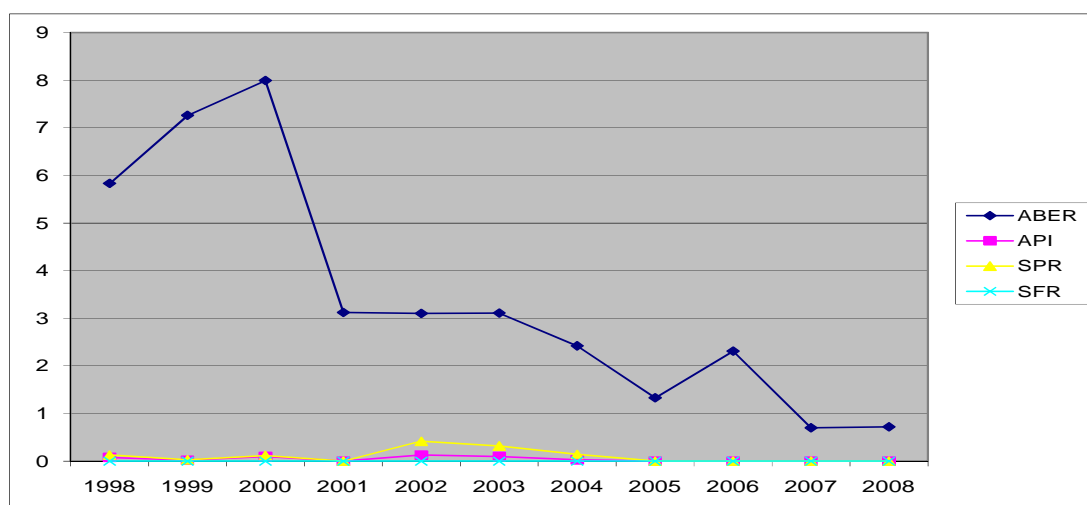


Figure 34. Trends of Malarimetric Indicators in Lakshadweep

Trends of ABER, API, SPR and SFR of **Lakshadweep UT** is presented in the **Table-34** and **Fig.-34**. ABER has gradually declined from 5.83 in the year 1998 to 0.72 in the year 2008. The API, SFR and SPR is also having declining trend in the decade. No case or death due to malaria is reported from the UT.

Pondichery

Table: 34. Year wise Epidemiological Indicators (1998-2008) in Pondichery

Year	ABER	API	SPR	SFR
1998	22.65	0.17	0.08	0
1999	24.99	0.15	0.06	0
2000	27.57	0.13	0.05	0
2001	31.72	0.11	0.03	0
2002	29.8	0.11	0.04	0
2003	30.13	0.06	0.02	0
2004	25.09	0.04	0.02	0
2005	21.22	0.04	0.02	0
2006	18.7	0.05	0.03	0
2007	11.73	0.06	0.05	0
2008	11.96	0.07	0.06	0

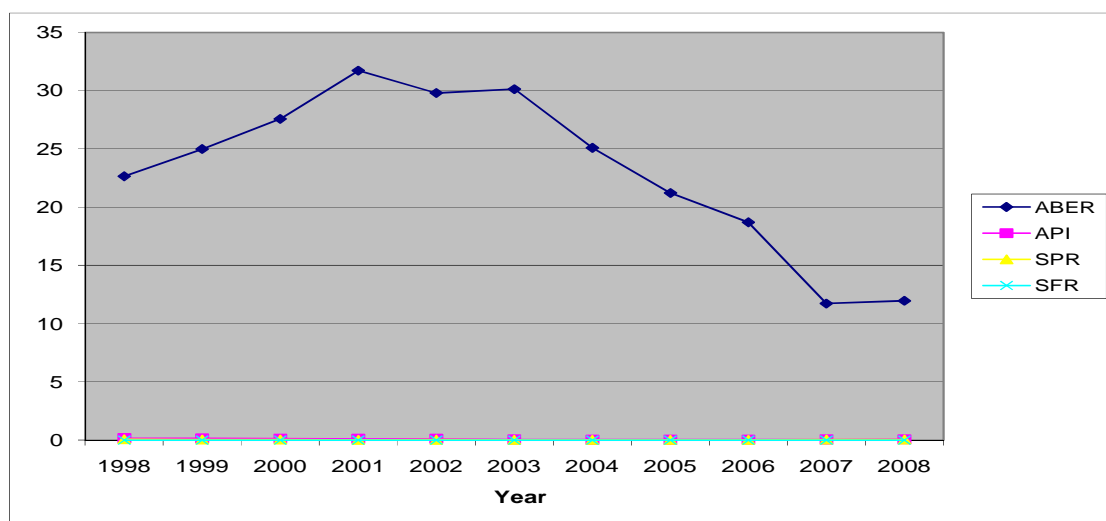


Figure 34. Trends of Malarionetric Indicators in Pondichery

Trends of ABER, API, SPR and SFR of Pondichery is presented in the **Table-34** and **Fig.-34**. ABER has decreased from 22.65 in the year 1998 to 11.96 in the year 2008 showing decreased surveillance in the state. The API and SPR is also having declining trend.