

## NATIONAL PROGRAMMES UNDER NRHM

### 6.1 INTRODUCTION

Several National Health Programme such as the National Vector Borne Diseases Control, Leprosy Eradication, TB Control, Blindness Control and Iodine Deficiency Disorder Control Programmes have come under the umbrella of National Rural Health Mission.

### 6.2 NATIONAL VECTOR BORNE DISEASE CONTROL PROGRAMME (NVBDCP)

The National Vector Borne Disease Control Programme (NVBDCP) is an umbrella programme for prevention and control of vector borne diseases viz. Malaria, Japanese Encephalitis (JE), Dengue, Chikungunya, Kala-azar and Lymphatic Filariasis. Out of these six diseases, two diseases namely Kala-azar and Lymphatic Filariasis have been targeted for elimination by 2015. The States are responsible for implementation of programme, whereas the Directorate of NVBDCP, Delhi provides technical assistance, policies and assistance to the States in the form of cash & commodity, as per approved pattern. Malaria, Filaria, Japanese Encephalitis, Dengue and Chikungunya are transmitted by mosquitoes whereas Kala-azar is transmitted by sand-flies. The transmission of vector borne diseases depends on prevalence of infective vectors and human-vector contact, which is further influenced by various factors such as climate, sleeping habits of human, density and biting of vectors etc.

The general strategy for prevention and control of vector borne diseases under NVBDCP is described below:

- (i) **Integrated Vector Management** including Indoor Residual Spraying (IRS) in selected high risk areas, Long Lasting Insecticidal Nets (LLINs), use of larvivorous fish, anti-larval measures in urban

areas including bio-larvicides and minor environmental engineering including source reduction.

- (ii) **Disease Management** including early case detection with active, passive and sentinel surveillance and complete effective treatment, strengthening of referral services, epidemic preparedness and rapid response.
- (iii) **Supportive Interventions** including Behaviour Change Communication (BCC), Inter-sectoral Convergence, Human Resource Development through capacity building.
- (iv) **Vaccination** only against J.E.
- (v) **Annual Mass Drugs Administration** (only against Lymphatic Filariasis)

#### 6.2.1 Malaria

- a) Malaria is an acute parasitic illness caused by *Plasmodium falciparum* or *Plasmodium vivax* in India. The main clinical presentation is with fever with chills; however, nausea and headache can also occur. The diagnosis is confirmed by microscopic examination of a blood smear and Rapid Diagnostic Tests. Majority of the patients recover from the acute episode within a week. Malaria continues to pose a major public health threat in different parts of the country, particularly due to *Plasmodium falciparum* severity may develop and may cause fatality, if not treated early.
- b) In India, out of 9 species of Malaria vectors, the major vector for rural malaria is *Anopheles culicifacies*, found all over the country and breeds in clean ground water collections. Other important Anopheline species namely *An.minimus* and *An.fluviatilis* breed in running channels, streams

with clean water. Some of the vector species also breed in forest areas, mangroves, lagoons, etc, even in those with organic pollutants.

- c) In urban areas, Malaria is mainly transmitted by *Anopheles stephensi* which breeds in man-made water containers in domestic and peri-domestic situations such as tanks, wells, cisterns, which are more or less of permanent nature and hence can maintain density for malaria transmission throughout the year. Increasing human activities, such as urbanization, industrialization and construction projects with consequent migration, deficient water and solid waste management and indiscriminate disposal of articles (tyres, containers, junk materials, cups, etc.) create mosquito-genic conditions and thus contribute to the spread of vector borne diseases.

**Epidemiological Situation:** The status of total cases, Pf cases, deaths and API from 2005 to 2013 is given in the table and the Graph as follows. The state-wise data on malaria cases & deaths since 2010 is at **Appendix- I**.

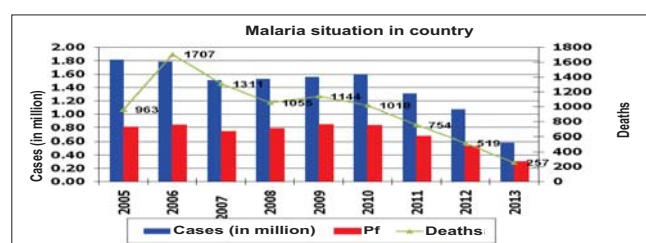
#### Malaria Situation in the country during 2005-2013

Year	Cases (in millions)		Deaths	API
	Total	Pf		
2005	1.82	0.81	963	1.68
2006	1.79	0.84	1707	1.66
2007	1.50	0.74	1311	1.39
2008	1.53	0.78	1055	1.36
2009	1.56	0.84	1144	1.36
2010	1.60	0.83	1018	1.37
2011	1.31	0.67	754	1.10
2012	1.06	0.53	519	0.88
2013 (P)	0.84	0.45	379	0.21

Pre-independence estimates of Malaria were about 75 million cases and 0.8 million deaths annually. The problem was virtually eliminated in the mid-sixties but resurgence led to an annual incidence of 6.47 million cases in 1976. Modified Plan of Operation was launched in 1977 and annual malaria incidence started declining.

The cases were contained between 2 to 3 million cases annually till 2001 afterwards the cases have further started declining.

During 2011, the malaria incidence was around 1.31 million cases, 0.67 million Pf cases and 754 deaths; while during 2012, 1.01 million cases, 0.53 Pf cases and 519 deaths were reported. About 91% of malaria cases and 99% of deaths due to malaria are reported from high disease burden states namely North Eastern (NE) States, Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Rajasthan and West Bengal. However, other States are also vulnerable and have local and focal upsurge. During 2013 (P), 0.84 million cases, 0.45 million Pf cases and 379 deaths have been reported.



Resistance in *Plasmodium falciparum* to Chloroquine was observed to be very high and frequent in the studies conducted during 2001 onwards. Therefore, Artemisine Combination Therapy (ACT) is now being used as first line of treatment for all Pf cases in whole of the county. However, in North-Eastern States early signs of resistance to currently used SP-ACT, has been noticed and so, as per the advice of Technical Advisory Committee, effective combination of Artemether-Lumefantrine (ACT-AL) has been recommended for the treatment of Pf cases in the North Eastern States. For strengthening surveillance, Rapid Diagnostic Test (RDT) for diagnosis of *P.falciparum* malaria has also been introduced in high endemic areas and being scaled up. Considering that about 50% of the malaria cases are due to *P vivax* in the country, bivalent RDT (detecting both Pv and Pf infection) has been introduced in the country at the field level from this year. ASHAs have been trained in diagnosis and treatment of malaria cases and are involved in early case detection and treatment.

The Government of India provides technical assistance and logistics support including anti malaria drugs, DDT, larvicides, etc. under NVBDCP within overall umbrella of NRHM. State Governments have to implement the programme and required human resource and other logistics are to be ensured.

### Externally supported projects:

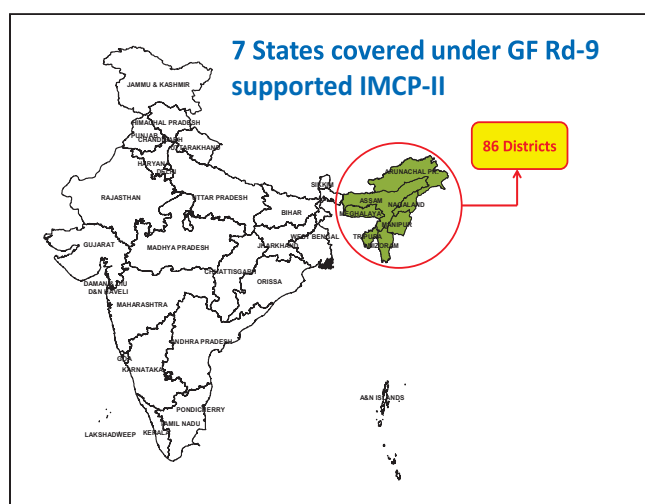
Additional support for combating malaria is provided through external assistance in high malaria risk areas. There are two such externally funded projects which are currently being implemented for Malaria Control:

- i. Global Fund Supported Intensified Malaria Control Project (IMCP-II)
- ii. World Bank Supported Project on Malaria Control & Kala-azar Elimination.

The areas covered under these projects are as under:

#### (i) The Global Fund supported 'Intensified Malaria Control Project- Phase II' (IMCP-II)

Global Fund Round 9 supported Intensified Malaria Control Project (IMCP-II) is being implemented since October 2010 for a period of five years in 7 NE States. The project area covers a population of 46 million in 86 districts as shown in the map.

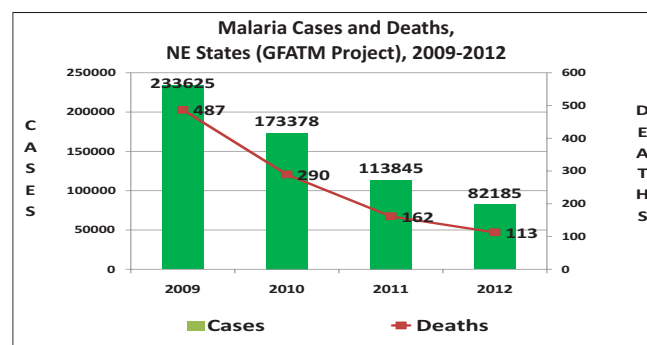


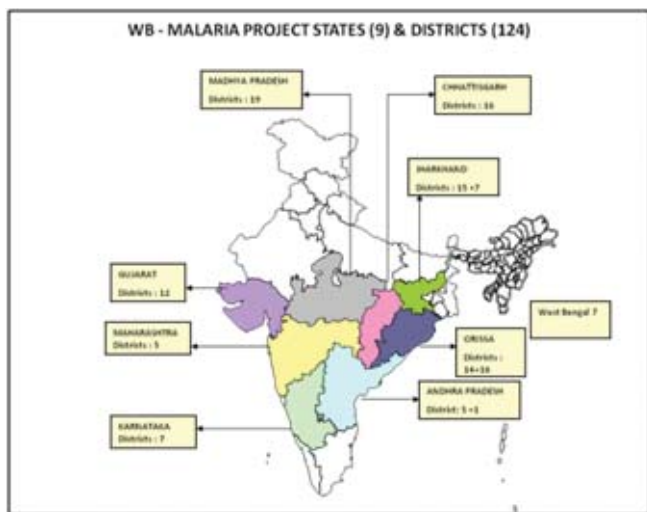
The strategies of the project are early diagnosis and complete treatment, integrated vector control including promotion of ITN (LLINs), through intensive IEC and capacity building & training of the health workers & community volunteers. Specific inputs are provided to these project areas in the form of manpower, RDTs, drugs and LLINs. The period for first phase is for two years starting from October 2010 to Sept. 2012. The Phase-II is granted by the GFATM based on the experience of the phase I. CARITAS India is the partner Principal Recipient 2 (PR2) in the project.

**Additional Support** provided in project area is listed below:

- Human resource such as Consultants and support staff for project monitoring units at state and district level and malaria technical supervisor and laboratory technicians at sub-district level.
- Capacity building of Medical Officer/Lab. Technicians/ Fever Treatment Depots/Volunteers etc.
- Commodities such as Long-Lasting Insecticidal Nets (LLINs), Rapid Diagnostic tests for quick diagnosis of Malaria, alternate drugs i.e. Artemisinin based Combination Therapy and Inj. Artesunate for treating severe malaria cases.
- Planning & administration including mobility support, monitoring, evaluation and operational research (studies on drug resistance and entomological aspects).

The impact of the project activities is reflected in sharp reduction of malaria cases and deaths due to malaria in project states (7) as shown in the graph.





**(ii) The World Bank Supported Project on Malaria Control & Kala-azar Elimination**

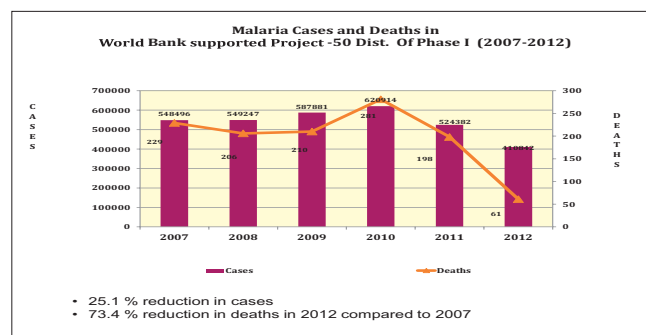
This project has been approved for 5 years effective from 2009 to December 2013. The total financial outlay for this project is Rs.1000 crore. This project covers 124 malarious districts of nine (9) States namely Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Karnataka & West Bengal and 46 Kala-azar districts in three States namely Bihar, Jharkhand and West Bengal. The project is being implemented in two phases. Phase one covered 50 most malaria endemic districts in five States namely Andhra Pradesh, Chhattisgarh, Madhya Pradesh, Odisha and Jharkhand and 46 Kala-azar districts in Bihar, Jharkhand & West Bengal. From 3rd year, Phase two is being implemented in remaining 74 high malaria endemic districts.

**Additional support provided in this project is:**

- Provision of Human Resource like Consultants & Support staff at National, State, District & Sub District level for Surveillance & monitoring.
- Promotion & use of long lasting Insecticide Nets (LLINs) in high malaria endemic areas.
- Social Mobilization and vulnerable community plan to address the issues of marginalized sections.
- Strong BCC/IEC activities at Sub district level through identified agencies.

- The project also envisaged the safe guard policies by undertaking Environmental Management Plan (EMP) on safe disposal & for prevention of environmental hazards.
- Capacity building of Medical Officer/Lab Technicians/Fever Treatment Depots/Volunteers etc.
- Supply of rapid kits for Malaria and drug Artemesinin based combination therapy (ACT) for treatment of PF cases.

**Impact:** With this additional support the impact in malaria cases and deaths in phase I districts shows that there has been 25.1% reduction in malaria cases and 73.4% decline in deaths due to malaria in the 50 districts of Phase I implementation.



**6.2.2 Urban Malaria Scheme**

The Urban Malaria Scheme (UMS) under NVBDCP was sanctioned in 1971 by Govt. of India with main objectives of preventing deaths due to malaria and reduction in transmission and morbidity. This scheme is currently being implemented in 131 towns in 19 States and Union Territories protecting about 130 million population. Under this scheme, the larvicides are supported by Govt. of India through cash assistance, however, the entire staff for implementation and operational cost is to be borne by the state/corporation/municipality.

**Epidemiological Situation:** About 10% of the total cases of malaria are reported from urban areas. Maximum numbers of malaria cases are reported from Ahmedabad, Chennai, Kolkata, Mumbai, Vadodara, Vishakapatnam, Vijayawada etc. The comparative epidemiological profile

of malaria during 2008-2012 in all urban towns of the country is given below:

Comparative Epidemiological profile of malaria in 19 States under UMS during 2008-12							
Year	Population	Total cases	P.f	P.F %	SPR	SFR	Deaths
2008	113334073	115424	18971	16.44	2.48	0.41	102
2009	114699850	166075	31132	18.75	2.99	0.56	213
2010	116136978	220062	33174	15.08	3.79	0.58	149
2011	130316971	142502	13910	9.77	2.07	0.21	147
2012	130329138	82554	8236	9.98	1.35	0.14	61

*P.f* = *Plasmodium falciparum*, *SPR*= Slide positivity rate, *SFR*= Slide falciparum rate.

**Control Strategy:** Under UMS, Malaria Control strategies are for (i) Parasite Control & (ii) Vector Control

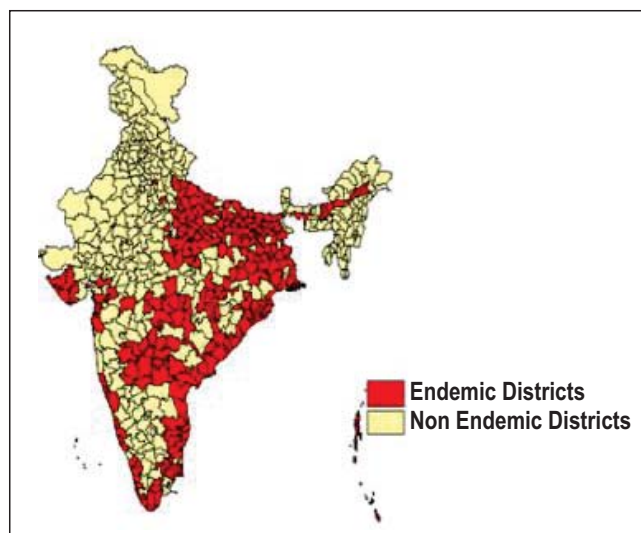
- i. **Parasite Control:** Treatment is done through passive agencies viz. hospitals, dispensaries both in private & public sectors. In mega cities malaria clinics are established by each health sector/malaria control agencies viz. Municipal Corporations, Railways, Defence services
- ii. **Vector Control:** Source reduction, use of larvicides, use of larvivorous fish, space spray, minor engineering and Legislative measures.

The control of urban malaria depends primarily on the implementation of urban bye-laws to prevent mosquito breeding in domestic and peri-domestic areas or residential blocks and government/commercial buildings, construction sites. The Bye-laws have been enacted and being implemented in Delhi, Chennai, Mumbai, Chandigarh, Ahmedabad, Bhavnagar, Surat, Rajkot, Bhopal, Agartala and Goa etc.

### 6.2.3 Elimination of Lymphatic Filariasis

Lymphatic Filariasis in India is mainly caused by *Wuchereria bancrofti* and is transmitted mainly by mosquito *Culex quinquefasciatus* which breeds in dirty and polluted water, however, it can also breed in clear water in the absence of polluted water. The infection is prevalent in both urban and rural areas. The disease is also caused by another positive agent namely *Brugia*

malayi which is transmitted mainly by *Mansonia annulifera* which is also the principal vector of this parasite. *M.uniformis* also plays a role in transmission of the disease and, therefore, is the secondary vector for transmission of brugia infection. Prevalence of *brugia* infection is restricted to small foci of Kerala.



The disease is reported to be endemic in 250 districts in 20 States and UTs. The population of about 600 million in these districts is at risk of lymphatic filariasis. This disease causes personal trauma to the affected persons and is associated with social stigma, even though it is not fatal.

The target year for **Global** elimination of this disease is by the year 2020. Government of India is signatory

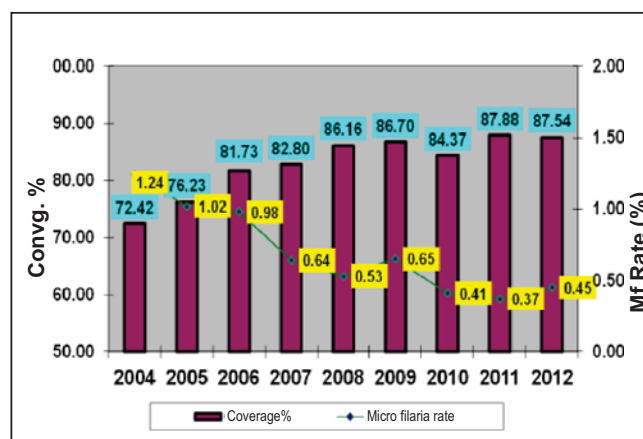
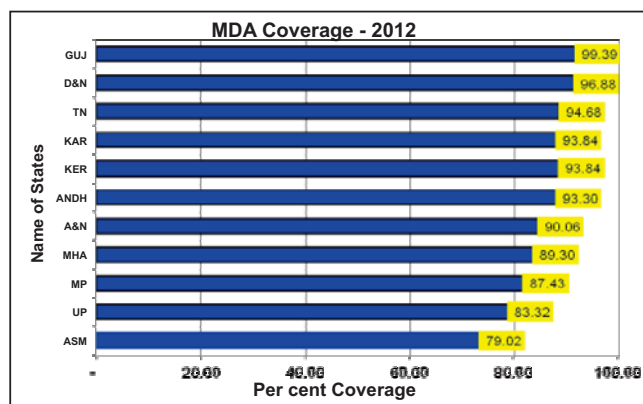
to the World Health Assembly Resolution in 1997 for Global Elimination of Lymphatic Filariasis. The National Health Policy (2002) has envisaged elimination of Lymphatic Filariasis in India by 2015.

The strategy of Lymphatic Filariasis elimination is through:

- Annual Mass Drug Administration (MDA) of single dose of DEC + Albendazole for a minimum five rounds or more to the eligible population (except pregnant women, children below 2 years of age and seriously ill persons) to interrupt transmission of the disease.
- Home based management of lymphoedema cases and up-scaling of hydrocele operations in identified CHCs/ District hospitals/medical colleges.



To achieve elimination of Lymphatic Filariasis, the Government of India during 2004 launched annual Mass Drug Administration (MDA) with annual single recommended dose of DEC tablets in addition to scaling up home based foot care and Hydrocele operation. The co-administration of DEC+ Albendazole has been up scaled since 2007. The programme covered 202 districts in 2004 whereas by the year 2007, all the 250



LF endemic districts where covered. MDA starts the month of November; however, the dates of observance of MDA are staggered depending on the preparedness of the states. The coverage has improved from 72.4% in 2004 to 87.5% in 2012.

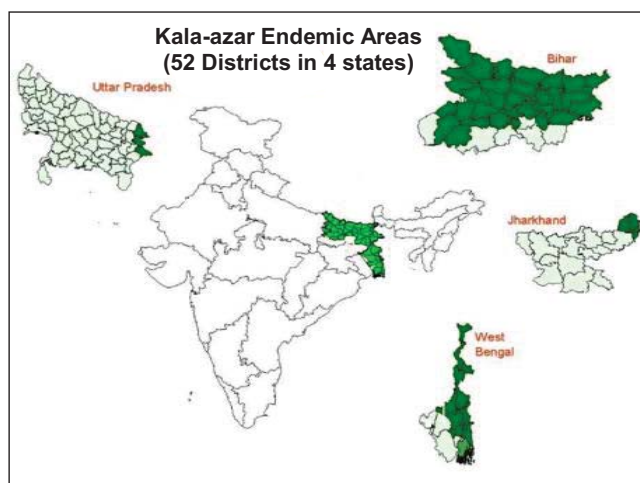
During 2012, two districts of Goa, Puducherry, Daman & Diu and 16 districts of Tamil Nadu stopped MDA as validation process was initiated. Out of these Goa, Puducherry and one districts of Tamil Nadu has successfully completed validation through Transmission Assessment Survey (TAS). In rest of districts, the validation process has been initiated. In addition, during 2013, the validation process has been initiated in Andhra Pradesh (4 districts), Assam (2 districts), Gujarat (4 districts), Karnataka (3 districts), Kerala (2 districts), Madhya Pradesh (3 districts), Maharashtra (9 districts), Odisha (5 districts), West Bengal (2 districts) and Chhattisgarh (2 districts). MDA-2012 round was delayed in Odisha and Chhattisgarh, however, MDA-2012 round has been scheduled in October 2013. Jharkhand and Lakshadweep has missed the MDA-2012 round. The state wise coverage is indicated in **Appendix-2**.

The Line listing of lymphoedema and Hydrocele cases was initiated since 2004 by door to door survey in these filaria endemic districts. The enlisted cases are regularly being updated by state health authorities and more cases are being recorded. This increase is mainly due to incomplete surveys during initial years and reluctance on part of community to reveal their manifestations of lymphoedema and Hydrocele. The updated figure till December 2012 revealed about 12 lakh cases with clinical manifestations (8 lakhs lymphoedema and 4 lakhs Hydrocele). The initiatives have also been taken to demonstrate the simple washing of foot to maintain hygiene for prevention of secondary bacterial and fungal infection in chronic lymphoedema cases so that the patients get relief from frequent acute attacks. The states regularly update the list and intensify the hydrocele operations in their respective states.

The microfilaria survey in all the implementation units (districts) is being done through night blood survey before MDA. The survey is done in 4 sentinel and 4 random sites collecting total 4000 slides (500 from each site). The data provided by the states indicate reduction in overall microfilaria rate in the MDA districts (1.24% in 2004 to 0.45% in 2012).

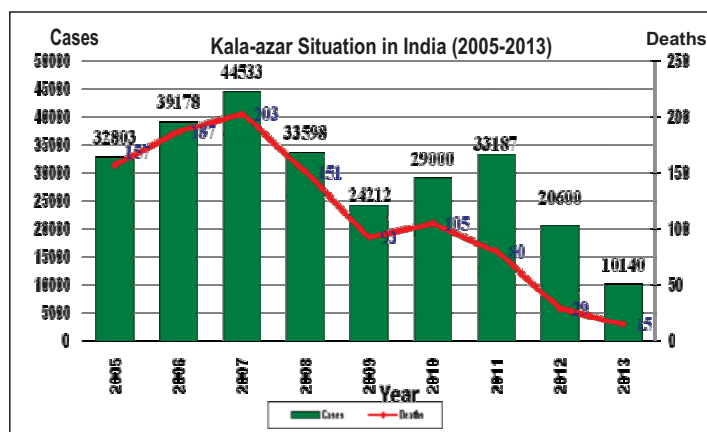
#### 6.2.4 Kala-Azar

Kala-azar is caused by a protozoan parasite *Leishmania donovani* and spread by sandfly (*phelbotomus argentipes*), which breeds in shady, damp and warm places in cracks and crevices in the soft soil, in masonry and rubble heaps, etc. Proper sanitation and hygiene are critical to prevent sand fly breeding. The disease has also been targeted for elimination by 2015 as per tripartite agreement between India, Nepal and



Bangladesh. In pursuance to achieve the elimination goal, case detection and treatment compliance has been strengthened and Rapid Diagnostic Test for Kala-azar and oral drug miltefosine has been introduced. World Bank is providing State & District level VBD Consultants, Kala azar Technical Supervisor (KTS), mobility for monitoring & supervision and capacity building/training in 46 districts in 3 states namely Bihar, Jharkhand and West Bengal.

Kala-azar is endemic in 52 districts (31 in Bihar, 4 in Jharkhand, 11 in West Bengal and 6 in UP). The Kala-azar Control Programme was launched in 1990-91. The annual incidence of disease has come down from 77,102 cases in 1992 to 29000 cases in 2010 and deaths from 1,419 to 105 respectively. The cases recorded during 2011 were 33187 with 80 deaths, 2012, 20600 cases and 29 deaths & whereas during the year 2013 (Upto Dec.), 13869 cases and 20 deaths have been reported. - **Appendix 3.**



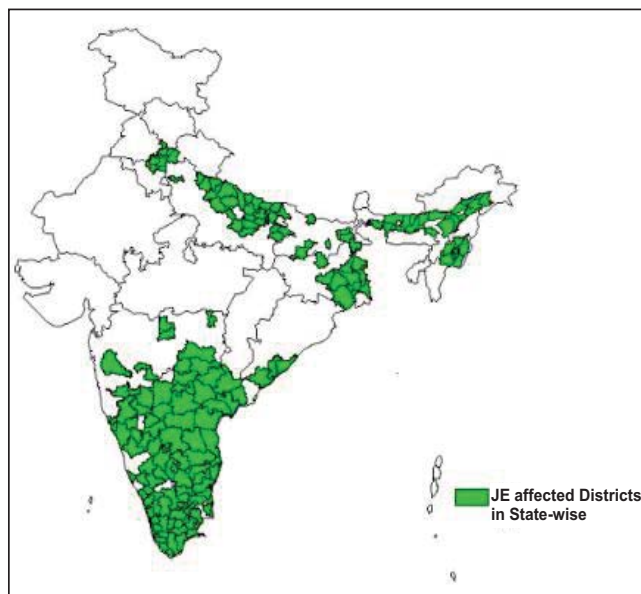
### Strategy for Kala-azar elimination is through:

- **Parasite elimination and disease management**
  - Early case detection and complete treatment;
  - Strengthening of referral;
- **Integrated vector control**
  - Indoor Residual Spraying (IRS);
  - environmental management by maintenance of sanitation and hygiene;
- **Supportive interventions**
  - Behaviour Change Communication for social mobilization;
  - Inter-sectoral convergence;
  - Capacity building by training and Monitoring and Evaluation

To realize the goal of elimination of Kala-azar, the Govt. of India is providing 100% support to endemic states since 2003-04.

Initiatives undertaken for Kala-azar elimination are as follows:

- Diagnostic tools i.e. RDK for Kala-azar has been introduced in all the Kala-azar endemic districts.
- Effective Oral drug - Miltefosine has been introduced and expanded in all the affected districts as first line of treatment.
- Indoor residual spray with DDT 50% for vector control.
- Incentive to the Kala-azar patient towards loss of wages @ Rs.50/- per day during the period of treatment.
- Free diet support to the patient and one attendant accompanying the patient.
- Incentive to ASHA for Rs.200/- per patient (Rs.50/- for referring a suspected case and Rs.150/- after completion of the treatment after confirmation through RDK).
- Support to states for engaging 46 VBD Consultants and 276 Kala-azar Technical Supervisors (KTS) in 46 districts under World Bank Supported Project.



### 6.2.5 Japanese Encephalitis

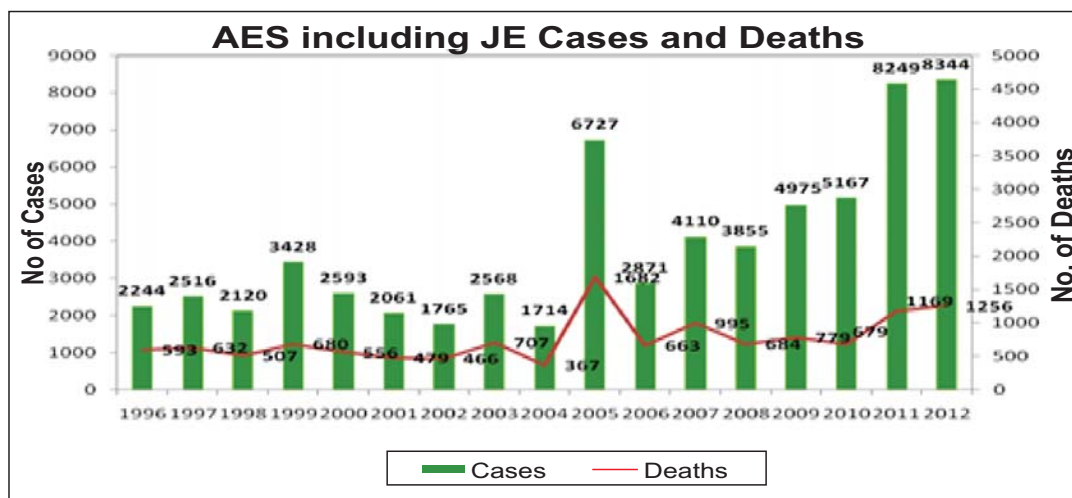
Japanese Encephalitis is a zoonotic disease which is transmitted by vector mosquito mainly belonging to *Culex vishnui* group. The transmission cycle is maintained in the nature by animal reservoirs of JE virus like pigs and water birds. Man is the dead end host, i.e. JE is not transmitted from one infected person to other. Outbreaks are common in those areas where there is close interaction between pigs/birds and human beings. The vectors of JE breed in large water bodies rich in aquatic vegetations such as paddy fields. The population at risk is about 375 million.

**JE** is reported under the umbrella of Acute Encephalitis Syndrome (AES). Therefore, the data reported from states are for total AES including JE cases.

**Epidemiological Situation:** JE has been reported from different parts of the country. The disease is endemic in 18 states of which Assam, Bihar, Tamil Nadu, Uttar Pradesh and West Bengal have been reporting outbreaks. During 2011, 8249 cases and 1169 deaths and during 2012, 8344 cases and 1256 deaths due to Acute Encephalitis Syndrome (AES) including JE were reported. During 2013 (till 24.4.2013), 7825 cases and 1273 deaths due to Acute Encephalitis Syndrome (AES) including JE have been reported.



State-wise AES and JE cases with deaths as reported by states are given in **Appendix - 4**.



There is no specific cure for this disease. Symptomatic and early case management is very important to minimize risk of death and complications. Govt. of India launched JE vaccination programme as an integral component of Universal Immunization Programme (UIP) with single dose live attenuated JE (SA- 14-14-2) in 11 endemic districts of 4 States namely Uttar Pradesh, Assam, West Bengal and Karnataka for children between 1 and 15 years of age. However, 130 districts have been covered under JE Vaccination till 2013 (till September), however, in additional 5 districts immunization is ongoing.

In addition, implementation of public health measures such as, Social Mobilization through different media, inter-personal communication, etc for disseminating appropriate messages in the community is crucial. The emphasis is given on keeping pigs away from human dwellings or in pigsties particularly during dusk to dawn which is the biting time of vector mosquitoes. Sensitization of the community regarding avoidance of man-mosquito contact by using bet nets and fully covering the body are also advocated. Since early reporting of cases is crucial to avoid any complication and mortality, community is given full information about the signs and symptoms as well as availability of health services at health centres/hospitals. Besides, the states are advised fogging with malathion (technical) as an outbreak control measure in the affected areas.

Realizing the gravity of the situation mainly due to non JE viruses in Uttar Pradesh, Group of Ministers (GoM)

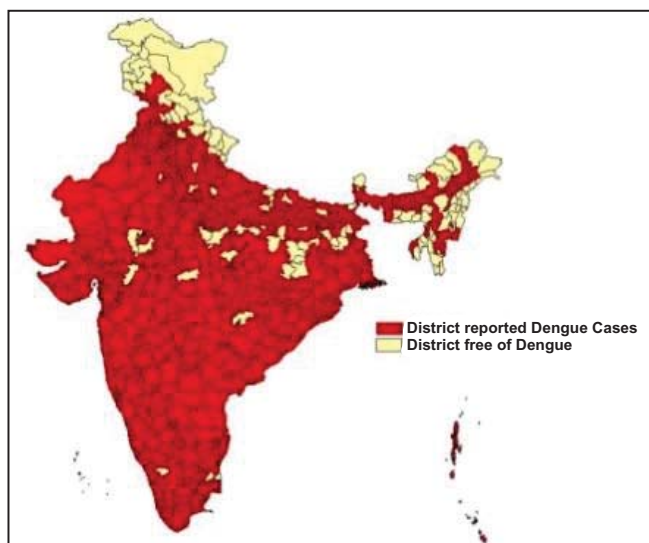
was constituted on 4.11.11 which suggested a multi pronged strategy for combating the menace of encephalitis. Group of Ministers (GoM) met four times (21<sup>st</sup> November, 25<sup>th</sup> November, 9<sup>th</sup> December, 2011 and 2nd February, 2012). The recommendation of GoM was approved by the Cabinet on 18.10.2012. The main thrust is on an integrated approach for strengthening prevention and control measures in 60 high priority districts in states of Assam, Bihar, Uttar Pradesh, West Bengal and Tamil Nadu, with involvement of following Ministries:

1. Ministry of Drinking Water Supply & Sanitation
2. Ministry of Housing and Poverty Elevation
3. Ministry of Women & Child Development
4. Ministry of Social Justice & Empowerment
5. Ministry of Health & Family Welfare as the nodal ministry for initializing the following activities:
  - Strengthening public health measures
  - Establishment of Paediatrics ICUs in 60 district hospitals
  - JE vaccination in 62 additional districts
  - Establishing PMR in 10 different medical colleges across 5 states
  - Providing safe drinking water, sanitation in rural and slum areas
  - Setting up of District Rehabilitation and counseling centers in 60 identified districts

- Improving the nutritional status of the children in endemic areas
- Involvement of ASHAs for helping in early referral of encephalitis cases

### 6.2.6 Dengue Fever/Dengue Haemorrhagic Fever

Dengue Fever is an outbreak prone viral disease, transmitted by *Aedes* mosquitoes. Both *Aedes aegypti* and *Ae.albopictus* are involved in transmission. *Aedes aegypti* mosquitoes prefer to breed in man made containers, viz., cement tanks, overhead tanks, underground tanks, tyres, desert coolers, pitchers, discarded containers, junk materials, etc., in which water stagnates for more than a week. This is a day biting mosquito and prefers to rest in hard to find dark areas inside the houses. *Aedes albopictus* mosquitoes prefer to breed in natural habitats like tree holes, plantation etc. The risk of dengue has increased in recent years due to rapid urbanization, and deficient water management including improper water storage practices in urban, peri-urban and rural areas, leading to proliferation of mosquito breeding sites. The cases peak after monsoon and it is not uniformly distributed throughout the year. However, in the Southern States and Gujarat the transmission is perennial. Dengue is a self-limiting acute disease characterized by fever, headache, muscle, joint pains, rash, nausea and vomiting. Some infections results in Dengue Haemorrhagic Fever (DHF) and in its severe form Dengue Shock Syndrome



*Open Overhead Tanks*

(DSS) can threaten the patient's life primarily through increased vascular permeability and shock due to bleeding from internal organs. Though during 2010, highest numbers of cases were reported (28292) the deaths have declined. The case fatality rate (CFR) which was 3.3 % in 1996 had come down to 0.4% in 2010, 0.9% in 2011 and 0.5 in 2012. The disease is spreading to newer geographical areas every year.

**Epidemiological Situation:** Dengue is endemic in 34 states/UTs. After 1996, outbreak with a total number of 16517 cases and 545 deaths upsurge of cases were recorded in 2003, 2005 and 2008. In 2009 total 15535 cases and 99 deaths have been reported. During 2011, 18860 cases and 169 deaths and during 2012, 50222 cases and 242 deaths were reported. Highest number of deaths were reported by Tamil Nadu (66) followed by Maharashtra (59). During 2013-14 (till 28.04.2014), 5730 cases and 20 deaths have been reported (**Appendix-5**).

There is no specific anti-viral drug or vaccine against dengue infection. Mortality can only be minimized by early diagnosis and prompt symptomatic management of the cases. A strategic action plan has been developed for prevention and control of Dengue and issued to the endemic States for implementation. Guidelines for clinical management of dengue fever/dengue haemorrhagic fever and dengue shock syndrome cases have been developed and sent to the states for wider circulation. Advisories have been sent to the endemic



Discarded Tyres

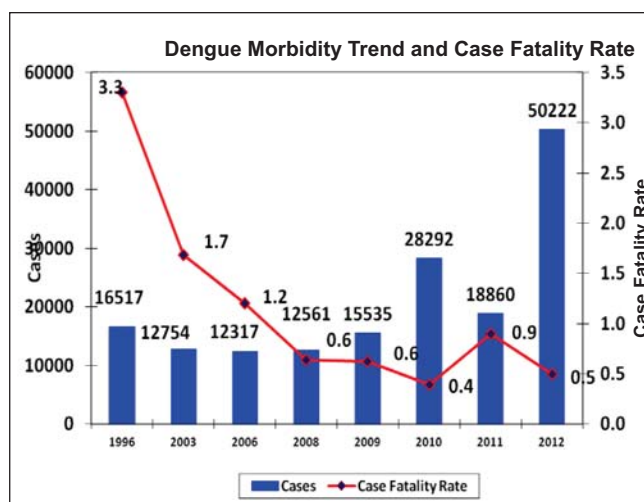


Jung Materials

areas for effective vector control through inter-sectoral collaboration and active community involvement, regular monitoring of Dengue cases as well as entomological parameters to forecast likely outbreaks and to take timely remedial measures. The States have been communicated to undertake widespread campaigns for community awareness and mobilization through different media like mass media, miking, inter-personal communication, etc. The emphasis is on elimination of mosquito breeding sources like avoidance of water collection in and around houses, removal of all discarded and disposed/junk materials, keeping all water containers/storage facilities tightly covered and cleaning the water coolers at least once a week before re-filling. Since

early reporting of cases is crucial to avoid any complication and mortality, the community is given full information about the signs and symptoms as well as availability of health services at health centres/hospitals. Alerting the Hospitals for making adequate arrangements for management of Dengue/Dengue Haemorrhagic Fever cases have also been advised.

The Directorate of National Vector Borne Disease Control has provided detailed guidelines for the prevention and control of dengue to the affected states. Intensive health education activities through print, electronic and inter-personnel media, outdoor publicity as well as an inter-sectoral collaboration with civil society organization (NGOs/CBOs/Self-Help Groups), PRIs and Municipal bodies have been emphasized. Regular supervision and monitoring is conducted by the Programme. The Government of India in consultation with States has identified 347 sentinel surveillance hospitals with laboratory support for augmentation of diagnostic facilities in the endemic states. The number of these sites are increasing to provide more diagnostic services for dengue. Further, for advanced diagnosis and backup support 14 Apex Referral Laboratories (**Appendix-6**) have been identified and linked with sentinel surveillance hospitals. To make these functional, IgM capture ELISA test kits are provided through National Institute of Virology, Pune free of cost. Contingency grant is also provided to meet the operational costs.



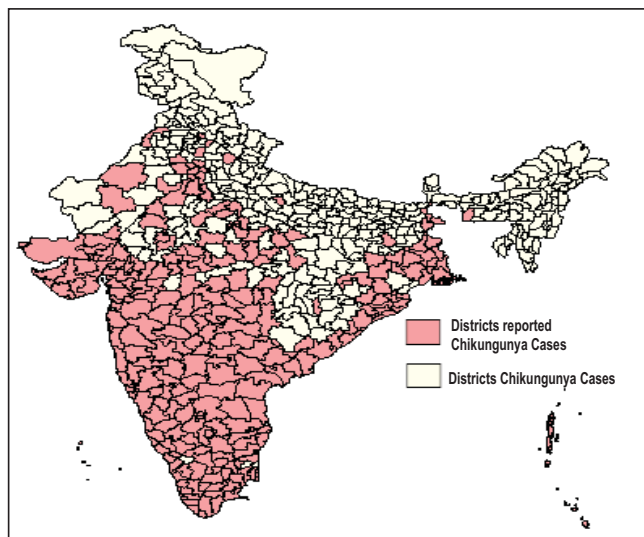
For early diagnosis ELISA based NS1 kits have been introduced under the programme which can detect the cases from 1<sup>st</sup> day of infection. IgM capture ELISA tests can detect the cases after 5<sup>th</sup> day of infection.

The Government of India has taken the following steps for prevention and control of Dengue:

- Monitoring the situation through reports received from State Health Authorities.
- A Mid Term Plan for prevention and control of dengue has been developed in 2011 and circulated to the states for implementation. The main components of Mid Term Plan for Prevention and control of Dengue are as follows:
  - Surveillance - Disease and Entomological Surveillance
  - Case Management - Laboratory Diagnosis and Clinical Management.
  - Vector Management - Environmental Management for Source Reduction, Chemical Control, Personal Protection and Legislation
  - Outbreak Response - Epidemic Preparedness and Media Management
  - Capacity building- Training, Strengthening Human Resource and Operational Research
  - Behaviour Change Communication - Social mobilization and Information Education and Communication (IEC)
  - Inter-sectoral Coordination - with Ministries of Urban Development, Rural Development, Panchayati Raj, Surface Transport and Education sector
  - Monitoring and Supervision - Analysis of reports, review, field visit and feedback

### 6.2.7 Chikungunya

Chikungunya is a debilitating non-fatal viral illness caused by Chikungunya virus. The disease re-emerged in the country after a gap of three decades. In India a major epidemic of Chikungunya fever was reported during 60s & 70s; 1963 (Kolkata), 1965 (Puducherry



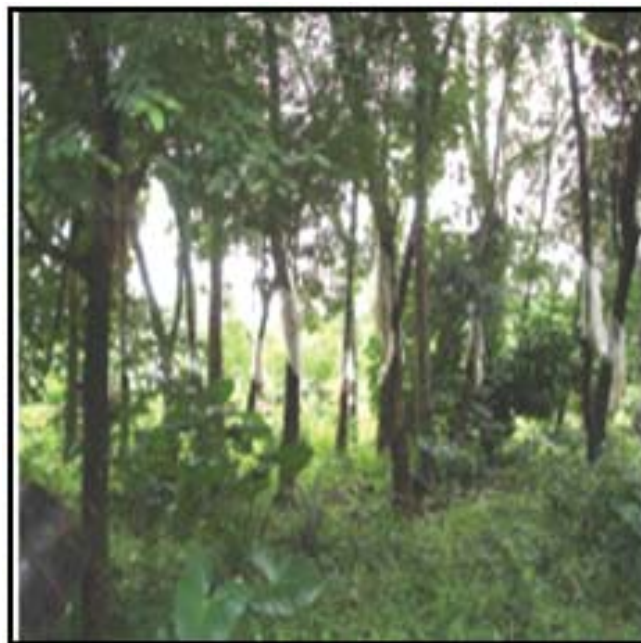
and Chennai in Tamil Nadu, Rajahmundry, Vishakapatnam and Kakinada in Andhra Pradesh; Sagar in Madhya Pradesh and Nagpur in Maharashtra) and 1973 (Barsi in Maharashtra). This disease is also transmitted by *Aedes mosquito*. Both *Ae.aegypti* and *Ae. albopictus* can transmit the disease. Humans are considered to be the major source or reservoir of Chikungunya virus. Therefore, the mosquitoes usually transmit the disease by biting infected persons and then biting others. The infected person cannot spread the infection directly to other person (i.e. it is not contagious disease). Symptoms of Chikungunya fever are most often clinically indistinguishable from those observed in dengue fever. However, unlike dengue, hemorrhagic manifestations are rare and shock is not observed in Chikungunya virus infection. It is characterized by fever with severe joint pain (arthralgia) and rash. Chikungunya outbreaks typically result in large number of cases but deaths are rarely encountered. Joint pains sometimes persist for a long time even after the disease is cured.

During 2006, total 1.39 million clinically suspected Chikungunya cases reported in the country. Out of 35 States/UTs 16 were affected: Andhra Pradesh, Karnataka, Maharashtra, Tamil Nadu, Madhya Pradesh, Gujarat, Kerala, Andaman & Nicobar Islands, Delhi, Rajasthan, Puducherry, Goa, Odisha, West Bengal, Lakshadweep and Uttar Pradesh. There are no reported deaths directly related to Chikungunya. In 2007, total 14 States were

affected and reported 59535 suspected Chikungunya fever cases with nil death. Subsequently in 2008, 2009, 2010 and 2011, 95091, 73288, 48176 and 20402 suspected Chikungunya fever cases with nil death were reported. During 2012, 15977 suspected Chikungunya cases were reported whereas during 2013 (till 28.04.2014) 18840 suspected Chikungunya cases have been reported (**Appendix-7**).

As already mentioned, *Aedes* mosquitoes bite during the day and breed in a wide variety of man-made containers which are common around human dwellings. These containers such as discarded tyres, flower pots, old water drums, family water trough, water storage vessels and plastic food containers collect rain water and become the source of breeding of *Aedes* mosquitoes. *Ae.aegypti* played the major role in transmitting the disease in all the states except Kerala, where *Ae.albopictus* played the major role. *Ae.albopictus* breeding was detected in latex collecting cups of rubber plantations, shoot-off leaves of areca palm, fruit shells, leaf axils, tree holes etc.

There is neither any vaccine nor drugs available to cure the Chikungunya infection. Supportive therapy that helps to ease symptoms, such as administration of non-steroidal anti-inflammatory drugs and getting plenty of rest are found to be beneficial.



Government of India is continuously monitoring the situation, sending guidelines and advisories for prevention and control of Chikungunya fever to the states. Since same vector is involved in the transmission of Dengue and Chikungunya strategies for transmission risk reduction by vector control are also same. A comprehensive Mid Term Plan for prevention & control of Chikungunya and Dengue/Dengue Haemorrhagic Fever has been prepared and disseminated for guidance to the states. Support in the form of logistics and funds are provided to the States. The central teams are deputed to the affected states for technical guidance of the state health authorities. As most transmission occurs at home, therefore, community participation and co-operation is of paramount importance for successful implementation of programme strategies for prevention and control of Chikungunya. For effective community participation, people are informed about Chikungunya and the fact that major epidemics can be prevented by taking effective preventive measures by community itself. Therefore, considerable efforts have been made through advocacy and social mobilization for community education and awareness.

For carrying out proactive surveillance and enhancing diagnostic facilities for Chikungunya, the 347 Sentinel Surveillance hospitals involved in dengue (**Appendix- 8**)



in the affected states also carries Chikungunya tests. Both Dengue and Chikungunya Diagnostic kits (IgM capture ELISA) to these institutes are provided through National Institute of Virology, Pune and cost is borne by Government of India. Further, rapid response by the concerned health authorities has been envisaged on report of any suspected case from the Sentinel Surveillance Hospitals to prevent further spread of the disease.

**The overall strategies for prevention and control are same as in Dengue** such as symptomatic management of cases, reduction of breeding sources, personal protection and intensive IEC and capacity building.

Initiatives undertaken by Government of India for prevention and control of Dengue/Chikungunya are as follows:

- Continuous monitoring of Chikungunya and Dengue situation in states.
- Circulation of guidelines and advisories for prevention and control of diseases to affected states.
- Launch of intensive IEC and Behaviour Change Communication activities through print, electronic media, interpersonal communication, outdoor publicity as well as inter sectoral collaboration with civil society organizations (NGOs/CBOs/ Self Help Groups), PRIs.
- Provision of larvicides and adulticides to affected states.
- Identification and strengthening of Apex Referral Laboratories and sentinel surveillance hospitals for diagnosis and regular surveillance.
- NIV, Pune has been entrusted for supply of test kits to the identified institutions free of cost.
- Contingency grant provided to the Apex Referral Laboratories and sentinel surveillance hospitals to meet the operational cost.
- Training is imparted on various aspects of prevention and control of Dengue and Chikungunya to programme personnel, Medical Officers on Case Management and laboratory personnel on case diagnosis.

## Appendix-1

## State-wise Malaria situation in the Country

STATES/UTs.	2010		2011		2012		2013 (P)	
	Cases	Deaths	Cases	Deathss	Cases	Deaths	Cases	Deaths
Andhra Prd.	33393	20	34949	5	24699	2	16406	0
Arunachal Prd.	17944	103	13950	17	8368	15	5412	13
Assam	68353	36	47397	45	29999	13	20492	7
Bihar	1908	1	2643	0	2605	0	2249	0
Chhattisgarh	152209	47	136899	42	124006	90	110899	17
Goa	2368	1	1187	3	1714	0	1530	0
Gujarat	66501	71	89764	127	76246	29	55703	21
Haryana	18921	0	33401	1	26819	1	11582	1
Himachal Prd.	210	0	247	0	216	0	141	0
J&K	802	0	1091	0	864	0	701	0
Jharkhand	199842	16	160653	17	131476	10	97215	6
Karnataka	44319	11	24237	0	16466	0	12023	5
Kerala	2299	7	1993	2	2036	3	1604	0
Madhya Pradesh	87165	31	91851	109	76538	43	73129	49
Maharashtra	139198	200	96577	118	58517	96	43676	80
Manipur	947	4	714	1	255	0	120	0
Meghalaya	41642	87	25143	53	20834	52	23860	62
Mizoram	15594	31	8861	30	9883	25	11783	21
Nagaland	4959	14	3363	4	2891	1	2286	1
Odisha	395651	247	308968	99	262842	79	216568	66
Punjab	3477	0	2693	3	1689	0	1737	0
Rajasthan	50963	26	54294	45	45809	22	25409	7
Sikkim	49	0	51	0	77	0	41	0
Tamil Nadu	17086	3	22171	0	18869	0	15054	0
Tripura	23939	15	14417	12	11565	7	6227	6
Uttarakhand	1672	0	1277	1	1948	0	1417	0
Uttar Pradesh	64606	0	56968	0	47400	0	48086	0
West Bengal	134795	47	66368	19	55793	30	28040	17
A&N Islands	2484	0	1918	0	1539	0	1005	0
Chandigarh	351	0	582	0	201	0	150	0
D & N Haveli	5703	0	5150	0	4940	1	1772	0
Daman & Diu	204	0	262	0	186	0	91	0
Delhi	251	0	413	0	382	0	382	0
Lakshadweep	6	0	8	0	9	0	0	0
Puducherry	175	0	196	1	143	0	126	0
<b>Total</b>	<b>1599986</b>	<b>1018</b>	<b>1310656</b>	<b>754</b>	<b>1067824</b>	<b>519</b>	<b>836916</b>	<b>379</b>

## Population Coverage (%) during Mass Drug Administration (MDA)

Sl. No.	States/UTs	2009	2010	2011	2012	2013
1	Andhra Pradesh	91.85	92.50	92.74	93.30	92.59
2	Assam	ND	76.08	76.75	79.02	78.67
3	Bihar	77.91	78.61	ND	NR	ND
4	Chhattisgarh	91.53	92.99	90.06	ND	ND
5	Goa	95.37	94.63	96.21	MDA Stopped	MDA Stopped
6	Gujarat	97.63	98.33	97.66	99.39	99.38
7	Jharkhand	85.99	63.64	86.53	ND	ND
8	Karnataka	89.30	91.46	91.81	93.84	ND
9	Kerala	77.81	81.91	89.62	80.90	73.33
10	Madhya Pradesh	87.59	90.74	89.27	87.43	ND
11	Maharashtra	89.51	89.38	89.28	89.30	91.21
12	Odisha	89.81	90.63	90.55	ND	91.1
13	Tamil Nadu	94.13	ND	93.58	94.68 (4 districts as MDA stopped in 16 districts)	MDA Stopped
14	Uttar Pradesh	ND	81.04	80.45	83.32	71.73
15	West Bengal	86.93	ND	79.23	ND	ND
16	A&N Islands	91.40	77.12	90.15	90.06	Report awaited
17	D & N Haveli	95.84	96.20	98.51	96.88	93.83
18	Daman & Diu	91.56	92.04	90.89	MDA stopped	MDA Stopped
19	Lakshadweep	83.86	80.09	73.94	ND	94.22
20	Puducherry	96.02	96.92	97.14	MDA Stopped	MDA Stopped
	<b>Total</b>	<b>86.70</b>	<b>84.37</b>	<b>87.92</b>	<b>87.54</b>	<b>86.87</b>

ND: - Not Done      NR: Not reported



**Appendix-3****State-wise Kala-azar Situation in Country**

Sl. No.	Affected States	2010		2011		2012 (Provisional)		2013 (P)	
		Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
1	Bihar	23084	95	25222	76	16036	27	10730	17
2	Jharkhand	4305	5	5960	3	3535	1	2515	0
3	West Bengal	1482	4	1962	0	995	0	595	2
4	Uttar Pradesh	14	0	11	1	5	0	11	1
5	Uttarakhand	1	0	0	0	7	1	0	0
6	Delhi *	92	0	19	0	11	0	6	0
7	Assam	12	0	5	0	6	0	4	0
8	Sikkim	3	0	7	0	5	0	8	0
9	Madhya Pradesh	0	0	0	0	0	0	0	0
10	Himachal Pradesh	6	1	1	0	0	0	0	0
11	Punjab*	1	0	0	0	0	0	0	0
	<b>Total</b>	<b>29000</b>	<b>105</b>	<b>33187</b>	<b>80</b>	<b>20600</b>	<b>29</b>	<b>13869</b>	<b>20</b>

\* Imported

## State-wise AES cases including JE in the country

Sl.	States/UTs.	2010		2011		2012		2013 (P)	
		Cases	Deaths	Cases	Deathss	Cases	Deaths	Cases	Deaths
1	Andhra Pradesh	139	7	73	1	64	0	345	3
2.	Arunachal Pradesh	0	0	0	0	0	0	0	0
2	Assam	469	117	1319	250	1343	229	1388	272
3	Bihar	50	7	821	197	745	275	417	143
5	Delhi	0	0	9	0	0	0	0	0
4	Goa	80	0	91	1	84	0	48	1
6	Haryana	1	1	90	14	5	0	2	0
8	Jharkhand	18	2	303	19	16	0	270	5
7	Karnataka	143	1	397	0	189	1	162	0
9	Kerala	19	5	88	6	29	6	53	6
10	Maharashtra	34	17	35	9	37	20	0	0
11	Manipur	118	15	11	0	2	0	1	0
12	Nagaland	11	6	44	6	21	2	20	0
13	Punjab	2	0	0	0	0	0	0	0
14	Tamil Nadu	466	7	762	29	935	64	77	8
15	Uttar Pradesh	3540	494	3492	579	3484	557	3096	609
16	Uttarakhand	7	0	0	0	174	2	0	0
17	West Bengal	70	0	714	58	1216	100	1735	226
18	Tripura	0	0	0	0	0	0	211	0
	<b>Total</b>	<b>5167</b>	<b>679</b>	<b>8249</b>	<b>1169</b>	<b>8344</b>	<b>1258</b>	<b>7825</b>	<b>1273</b>

**Appendix-4 (contd.)****State-wise JE situation in the country**

Sl.	STATES/UTs.	2010		2011		2012		2013 (P)	
		Cases	Deaths	Cases	Deathss	Cases	Deaths	Cases	Deaths
1	Andhra Pradesh	7	5	4	1	3	0	7	3
2	Arunachal Pradesh	0	0	0	0	0	0	0	0
3	Assam	142	40	489	113	463	100	495	134
4	Bihar *	0	0	145	18	8	0	14	0
5	Delhi	0	0	9	0	0	0	0	0
6	Goa	9	0	1	0	9	0	3	1
7	Haryana	1	0	12	3	3	0	2	0
8	Jharkhand	2	2	101	5	1	0	89	5
9	Karnataka	3	0	23	0	1	0	2	0
10	Kerala	0	0	37	3	2	0	2	0
11	Maharashtra	0	0	6	0	3	0	0	0
12	Manipur	45	5	9	0	0	0	0	0
13	Meghalaya	0	0	0	0	0	0	0	0
14	Nagaland	2	0	29	5	0	0	4	0
15	Punjab	0	0	0	0	0	0	0	0
16	Tamil Nadu	11	1	24	3	25	4	33	0
17	Tripura	0	0	0	0	0	0	14	0
18	Uttarakhand	7	0	0	0	1	0	0	0
19	Uttar Pradesh	325	59	224	27	139	23	281	47
20	West Bengal	1	0	101	3	87	13	140	12
	<b>Grand Total</b>	<b>555</b>	<b>112</b>	<b>1214</b>	<b>181</b>	<b>745</b>	<b>140</b>	<b>1086</b>	<b>202</b>

## State-wise Dengue Situation in Country

Sl. No.	State	2010		2011		2012 (Provisional)		2013 (P)	
		Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
1	Andhra Pd.	776	3	1209	6	2299	2	910	1
2	Arunachal Pd.	0	0	0	0	346	0	0	0
3	Assam	237	2	0	0	1058	5	4526	2
4	Bihar	510	0	21	0	872	3	1246	5
5	Chhattisgarh	4	0	313	11	45	0	83	2
6	Goa	242	0	26	0	39	0	198	2
7	Gujarat	2568	1	1693	9	3067	6	6272	15
8	Haryana	866	20	267	3	768	2	1784	5
9	Himachal Pd.	3	0	0	0	73	0	89	2
10	J & K	0	0	3	0	17	1	1837	3
11	Jharkhand	27	0	36	0	42	0	161	0
12	Karnataka	2285	7	405	5	3924	21	6408	12
13	Kerala	2597	17	1304	10	4172	15	7938	29
14	Madhya Pd.	175	1	50	0	239	6	1255	9
15	Meghalaya	1	0	0	0	27	2	43	0
16	Maharashtra	1489	5	1138	25	2931	59	5610	48
17	Manipur	7	0	220	0	6	0	9	0
18	Mizoram	0	0	0	0	6	0	7	0
19	Nagaland	0	0	3	0	0	0	0	0
20	Odisha	29	5	1816	33	2255	6	7132	6
21	Punjab	4012	15	3921	33	770	9	4117	25
22	Rajasthan	1823	9	1072	4	1295	10	4413	10
23	Sikkim	0	0	2	0	2	0	38	0
24	Tamil Nadu	2051	8	2501	9	12826	66	6122	0
25	Tripura	0	0	0	0	9	0	8	0
26	Uttar Pradesh	960	8	155	5	342	4	1414	5
27	Uttrakhand	178	0	454	5	110	2	54	0
28	West Bengal	805	1	510	0	6456	11	5920	6
29	A&N Island	25	0	6	0	24	0	67	0
30	Chandigarh	221	0	73	0	351	2	107	0
31	Delhi	6259	8	1131	8	2093	4	5574	6
32	D&N Haveli	46	0	68	0	156	1	190	0
33	Daman & Diu	0	0	0	0	96	0	61	0
34	Puducherry	96	0	463	3	3506	5	2215	0
	<b>TOTAL</b>	<b>28292</b>	<b>110</b>	<b>18860</b>	<b>169</b>	<b>50222</b>	<b>242</b>	<b>75808</b>	<b>193</b>

**Appendix-6**

**APEX REFERRAL LABORATORIES**

1. National Institute of Virology, Pune.
2. National Center for Disease Control (former NICD), Delhi.
3. National Institute of Mental Health & Neuro-Sciences, Bengaluru.
4. Sanjay Gandhi Post-Graduate Institute of Medical Sciences, Lucknow.
5. Post- Graduate Institute of Medical Sciences, Chandigarh.
6. All India Institute of Medical Sciences, Delhi.
7. ICMR Virus Unit, National Institute of Cholera & Enteric Diseases, Kolkata.
8. Regional Medical Research Centre (ICMR), Dibrugarh, Assam.
9. King's Institute of Preventive Medicine, Chennai.
10. Institute of Preventive Medicine, Hyderabad.
11. B J Medical College, Ahmedabad.
12. State Public Health Laboratory, Thiruvananthapuram, Kerala.
13. Defence Research Development and Establishment, Gwalior.
14. Regional Medical Research Centre for Tribals, (ICMR) Jabalpur, Madhya Pradesh.

## State-wise Clinically Suspected Chikungunya Cases in Country

Sl. No.	Name of the States/ UTs	2010	2011	2012 (Prov.)	2013 (Prov. upto 28.04.14)
1	Andhra Pd.	116	99	2827	4827
2	Assam	0	0	0	742
2	Bihar	0	91	34	0
3	Goa	1429	664	571	1049
4	Gujarat	1709	1042	1317	2890
5	Haryana	26	215	9	1
6	Jharkhand	0	816	86	61
7	Karnataka	8740	1941	2382	5295
8	Kerala	1708	183	66	273
9	Madhya Pd.	113	280	20	139
10	Meghalaya	16	168	0	0
11	Maharashtra	7431	5113	1544	1578
12	Odisha	544	236	129	35
13	Punjab	1	0	1	0
14	Rajasthan	1326	608	172	76
15	Tamil Nadu	4319	4194	5018	859
16	Uttar Pradesh	5	3	13	0
17	Uttarakhand	0	18	0	0
18	West Bengal	20503	4482	1381	646
19	A&N Island	59	96	256	202
20	Chandigarh	0	1	0	1
21	Delhi	120	110	6	18
22	D&N Haveli	0	0	100	2
23	Lakshadweep	0	0	0	0
24	Puducherry	11	42	45	146
	<b>Total</b>	<b>48176</b>	<b>20402</b>	<b>15977</b>	<b>18840</b>

**Appendix-8****List of Sentinel Surveillance Hospitals (SSH) for Dengue & Chikungunya**

Sl. No.	State	Number of SSH
1	A & N Island	3
2	Andhra Pradesh	32
3	Arunachal Pradesh	1
4	Assam	9
5	Bihar	5
6	Chandigarh	1
7	Chhattisgarh	2
8	Delhi	33
9	Daman & Diu	1
10	D&N Haveli	1
11	Goa	3
12	Gujarat	16
13	Haryana	14
14	Himachal Pradesh	2
15	Jammu	7
16	Jharkhand	4
17	Karnataka	22
18	Kerala	20
19	Lakshadweep	1
20	Madhya Pradesh	17
21	Maharashtra	23
22	Manipur	2
23	Meghalaya	3
24	Mizoram	1
25	Nagaland	2
26	Odisha	8
27	Puducherry	4
28	Punjab	15
29	Rajasthan	20
30	Sikkim	2
31	Tamil Nadu	30
32	Tripura	1
33	Uttar Pradesh	22
34	Uttrakhand	7
35	West Bengal	13
	<b>Total</b>	<b>347</b>

### 6.3 NATIONAL LEPROSY ERADICATION PROGRAMME (NLEP)

Since the inception of National Leprosy Eradication Programme (NLEP) in the year 1983 spectacular success have been made in reducing the burden of Leprosy. The country achieved the goal of leprosy elimination as a public health problem. i.e. prevalence rate (PR) of less than 1 case / 10,000 population at National level by December 2005, as set by National Health Policy 2002. Although prevalence has come down at national and state level, new cases are being continuously detected and these cases will have to be provided quality leprosy services through GHC system.

The plan budget has been substantially increased from Rs. 219.00 crore in 11th plan to Rs. 500.00 crore in the 12th plan.

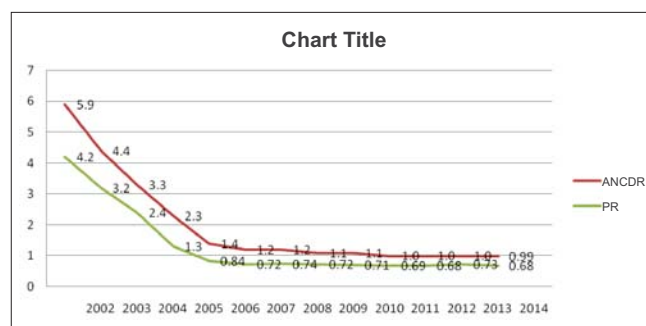
Following are the programme components:

- Case Detection and Management
- Disability Prevention and Medical Rehabilitation
- Information, Education and Communication (IEC) including Behaviour Change Communication (BCC)
- Human Resource and Capacity building
- Programme Management

#### 6.3.1 Epidemiological Situation:

- 33 States/UTs have achieved leprosy elimination status. Only 2 States/UT (Chhattisgarh and Dadra & Nagar Haveli) are yet to achieve elimination. One State (Chhattisgarh) and One U.T. (Dadra & Nagar Haveli) has remained with PR between 2 and 4 per 10,000 population. Two other States/UTs viz. Odisha and Chandigarh which have achieved elimination earlier have shown slight increase in PR (1-1.5) in the year 2013 -14. (**Table 1**).
- At the end of March 2014, there were 86134 leprosy cases on record (under treatment).
- In 2013-14, total 126900 new leprosy cases were detected and put under treatment as compared to 134752 leprosy cases detected during corresponding period of previous year, giving Annual New Case Detection Rate (ANCDR) of 9.98 per 1,00,000 population.

- 2707 reconstructive surgeries were conducted in 2013-14 for correction of disability in leprosy affected persons.
- The trend of Prevalence and Annual New Case Detection Rate per 10,000 population since 2002 is shown in the graph below:



#### 6.3.2 Activities under NLEP

- 1. Diagnosis and treatment of leprosy:-** Services for diagnosis and treatment (Multi drug therapy) are provided by all health facilities throughout the country free of cost. Difficult to diagnose and complicated cases and cases requiring reconstructive surgery are referred to district hospital for further management. Accredited Social Health Activists (ASHAs) under National Rural Health Mission (NRHM) are being involved to bring out leprosy cases from villages for diagnosis at Primary Health Centre (PHC) and follow up cases for treatment completion. ASHAs are being paid incentive for this purpose.
- 2. Training:-** Training of general health staff like medical officer, health supervisors, laboratory technicians, health workers, ASHAs are conducted regularly to develop skills in diagnosis and management of leprosy cases. The District Nucleus staffs under the District Leprosy Officer monitor the activities in the PHCs and provide on job training wherever needed to the General Health Care Staff.
- 3. Urban Leprosy Control:-** Urban Leprosy Control activities are being implemented in 524 urban areas having population size of more than 1 lakh. These activities include MDT delivery services & follow



up of patient for treatment completion, providing supportive medicines & dressing material and monitoring & supervision.

4. **Information, Education & Communication (IEC):-** Intensive IEC activities are conducted for awareness generation and particularly reduction of stigma and discrimination against leprosy affected persons. These activities are carried through mass media, outdoor media, rural media and advocacy meetings. More focus is given on inter personnel communication. Anti-leprosy fortnight is observed annually from 30th January to 13th February in which IEC at the village level is also supported with leprosy services.
5. **NGO services under NLEP:-** Presently, 43 NGOs are getting grants from Govt. of India under Survey, Education and Treatment (SET) scheme. The various activities undertaken by the NGOs are, IEC, Prevention of Impairments and Deformities, Case Detection and MDT Delivery. From financial year 2006 onwards, Grant-in-aid is being disbursed to NGO through State Health (Leprosy) Societies.
6. **Disability Prevention and Medical Rehabilitation:**
  - More emphasis is being given on correction of disability in leprosy affected persons through reconstructive surgery (RCS). To strengthen RCS services, Government of India has recognized 111 institutions for conducting RCS based on the recommendations of the state government. Out of these, 60 are Govt. institutions and 51 are NGO institutions.
  - For prevention of disability among persons with insensitive hands and feet, they are given dressing material, supportive medicines and Micro-Cellular Rubber (MCR) footwear. MCR footwear were provided to 69331 Leprosy Affected Persons during 2013-14. The patients are also empowered with self-care procedure for taking care of themselves. Self Care Kits were provided to 44412 Leprosy Affected Persons during the year.
7. **Supervision and Monitoring:-** Programme is being monitored at different level through analysis of

monthly progress reports, through field visits by the supervisory officers from Central and States, programme review meetings held at central, state and district level. For better epidemiological analysis of the disease situation, emphasis is given to assessment of New Case Detection and Treatment Completion Rate and proportion of grade II disability among new cases. Visit by Joint monitoring Teams with members from Government of India, ILEP and WHO has been initiated from the year 2012-13 and to be continued annually.

### 6.3.3 Initiatives:

1. **Special Activity in High Endemic District:-** 209 Districts had reported ANCDR more than 10 per lakh population in 16 States/UTs. Special activity for early detection and complete treatment, capacity building and extensive IEC, adequate availability of MDT, strengthening of district nucleus, regular monitoring & supervision and review, regular follow up for neuritis and reaction, self-care practices, supply of MCR footwear in adequate quantity and improvement in RCS performance through camp approach have been carried out during 2012-13 to reduce the disease burden.
2. **Disability Prevention and Medical Rehabilitation:-** An amount of Rs. 8000/- is provided as incentive to leprosy affected persons for undergoing each major reconstructive surgery in identified Govt./NGO institutions to compensate loss of wages during their stay in hospital. Support is also provided to Government institutions in the form of Rs. 5000/- per RCS conducted, for procurement of supply & material and other ancillary expenditure incurred for the surgery. Additional Rs. 5000/- is paid per RCS conducted in Camps.
3. **Involvement of ASHA:-** A scheme to involve ASHAs was drawn up to bring out leprosy cases from their villages for diagnosis at PHC and follow up cases for treatment completion. To facilitate involvement, they are being paid an incentive as below:
  - On confirmed diagnosis of case brought by them - Rs. 100/-

- On completion of full course of treatment of the case within specified time - Paucibacillary (PB) Leprosy case-Rs.200/- and Multibacillary (MB) Leprosy case - Rs. 400/-

4. **Discriminatory laws relating to leprosy:-** There are certain provisions under laws/acts which are discriminatory in nature against leprosy affected

persons. The Ministry of Health & Family Welfare has taken up the matter with concerned Ministries/ Departments/State Governments for modification or repealment of various such discriminatory acts/laws.

6.3.4 **Budget:-** The Budget allocation under NLEP for 2013-14 was Rs. 51 crore and expenditure incurred was Rs. 47.73 crores.

**Table-1 State - wise Prevalence Rate (PR) and Annual New Case Detection Rate (ANCDR) in 2013-14**

Sl.No.	States/UTs	Cases on record as on 31.03.2013	PR	New Cases detected	ANCDR
1	Andhra Pradesh	4809	0.55	7108	8.13
2	Arunachal Pr.	29	0.20	23	1.55
3	Assam	965	0.30	1048	3.21
4	Bihar	10100	0.91	18188	16.39
5	Chhattisgarh	5700	2.10	8519	31.38
6	Goa	60	0.40	72	4.82
7	Gujarat	5282	0.83	9721	15.27
8	Haryana	714	0.27	622	2.32
9	Himachal Pradesh	157	0.22	161	2.26
10	Jharkhand	2457	0.70	4021	11.48
11	J&K	200	0.15	175	1.30
12	Karnataka	2800	0.44	3466	5.43
13	Kerala	839	0.25	782	2.31
14	Madhya Pradesh	5399	0.70	6369	8.30
15	Maharashtra	10813	0.92	16400	13.96
16	Manipur	9	0.03	12	0.42
17	Meghalaya	26	0.08	24	0.75
18	Mizoram	25	0.22	30	2.59
19	Nagaland	123	0.62	158	7.99
20	Odisha	6405	1.47	10645	24.40
21	Punjab	529	0.18	648	2.25
22	Rajasthan	1237	0.17	1079	1.48
23	Sikkim	15	0.24	18	2.86
24	Tamil Nadu	2993	0.40	3810	5.06
25	Tripura	47	0.12	37	0.97
26	Uttar Pradesh	14428	0.68	22565	10.70
27	Uttarakhand	237	0.22	376	3.53
28	West Bengal	8242	0.87	9121	9.60
29	A & N Islands	28	0.72	32	8.26
30	Chandigarh	135	1.22	144	13.02
31	D & N Haveli	158	4.04	320	81.77
32	Daman & Diu	1	0.04	4	1.45
33	Delhi	1138	0.64	1145	6.46
34	Lakshadweep	0	0.00	0	0.00
35	Puducherry	34	0.25	57	4.26
	<b>Total</b>	<b>86134</b>	<b>0.68</b>	<b>126900</b>	<b>9.98</b>

## 6.4 REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME (RNTCP)

The Revised National TB Control Programme (RNTCP), based on the internationally recommended Directly Observed Treatment Short-course (DOTS) strategy, was launched in 1997 expanded across the country in a phased manner with support from World Bank and other development partners. Full nation-wide coverage was achieved, then covering over a billion population (1114 million) in March 2006, expanding to 1247 million people in first quarter of 2013. In terms of treatment of patients, RNTCP has been recognized as the largest and the fastest expanding TB control programme in the world. RNTCP is presently being implemented throughout the country.

### Estimated TB Burden in India

- **Incidence:** 2.2 million new TB cases annually- 176 cases per 100,000 population
- **Prevalence:** 2.8 million cases - 230 cases per 100,000 population
- **Deaths:** About 270,000 deaths each year - 22 deaths per 100,000 population
- Approximately 5% of TB patients estimated to be HIV +ve
- DR-TB (Drug resistant-TB):-
  - 2.2% in New cases and
  - 15% in previously treated cases

India is highest TB burden country in the world, accounting for about 23.3% of the global prevalence and in 2012. Out of the estimated global annual incidence of 8.6 million TB cases; 2-2.4 million were estimated to have occurred in India, with a best case estimate of 2.2 Million cases. India has contributed to approximately 25.5% of the total global new cases detection during the year 2012 as per the WHO Global Report 2013.

### Goal of the programme

The goal of TB control Programme is to decrease mortality and morbidity due to TB and cut transmission of infection until TB ceases to be a major public health problem in India.

### Objectives of the programme

- To reduce the incidence of and mortality due to TB;
- To prevent further emergence of drug resistance and effectively manage drug-resistant TB cases;
- To improve outcomes among HIV-infected TB patients;
- To involve private sector on a scale commensurate with their dominant presence in health care services and
- To further decentralize and align basic RNTCP management units with NRHM block level units within general health system for effective supervision and monitoring.

### RNTCP Achievements

- In 2005, 1.29 million, in 2006, 1.39 million; in 2007, 1.48 million patients; in 2008, 1.51 million; in 2009, 1.53 million TB patients; in 2010, 1.52 million TB patients, in 2011, 1.51 million, and in 2012, 1.46 million TB patients have been registered for treatment. Till the end of 2nd quarter 2013, 725332 patients have been registered.
- Treatment success rates have tripled from 25% in pre-RNTCP era to 88% presently (2012) and TB death rates have been reduced from 29% to 4% during the same period.
- Since 2007, RNTCP has also achieved the NSP case detection rate of more than 70% in line with the global targets for TB control while maintaining the treatment success rate of >85%. In 2010 the NSP Case detection rate was 72% and treatment success rate 87%. In 2011 the NSP Case detection rate was 71% and treatment success rate 88%. In 2012 the NSP Case detection rate was 68.4% and treatment success rate 88%.
- Quality assured diagnostic facilities are available through more than 13209 Designated Microscopy Centers (DMCs) across the country.
- To ensure quality of sputum microscopy, external quality assurance is being routinely conducted

throughout the country as per a standardized protocol based on international guidelines with all components for ensuring quality-on site evaluation, panel testing and blinded crosschecking.

- All states are implementing the 'Supervision and Monitoring strategy'-detailing guidelines, tools and indicators for monitoring the performance from the PHI level to the national level.
- The programme is focusing on the reduction in the default rates amongst all new and re-treatment cases and is undertaking steps for the same.
- To improve access to tribal and other marginalized groups the programme has developed a Tribal action plan which is being implemented with the provision of additional TB Units and DMCs in tribal/difficult areas, additional staff, compensation for transportation of patient & attendant and higher rate of salary to contractual staff.
- The programme has introduced Pediatric patient wise boxes, in 2006, with formulations and doses specifically designed for convenient usage in children.
- 2708 NGOs collaborations and 13311 Private practitioners are involved in the programme in different signed schemes under NGO/PP schemes. 319 medical colleges (including private ones) have been involved in RNTCP by the end of Quarter 2 of 2013.
- Health facilities in government sectors outside Health Ministry have been involved viz. ESI, Railways, Ports and the Ministries of Mines, Steel, Coal, etc.
- Intensified Public Private Mix project is being undertaken with Indian Medical Association (IMA) in 16 states and with Catholic Bishop Conference of India (CBCI), a faith based organization (FBO), in 19 States under the Global Fund supported Single Stream Funding Project.
- Under the Global Fund Round 9 project civil society organizations are undertaking activities in 374 districts across 23 States to enhance the visibility and reach of the programme and engage with communities and community based care providers to improve TB care and control.

#### 6.4.1 Scale-up of Programmatic Management of Drug-resistant TB (PMDT)

The Revised National Tuberculosis Control Programme has a vision to provide universal access to quality TB care including access to quality assured diagnosis and management of Drug Resistant Tuberculosis. The RNTCP rolled out services for diagnosis and management of multi-drug resistant TB (MDR-TB) in the states of Gujarat and Maharashtra in the year 2007. These services since then have been scaled up and currently these services are available across the country from March 2013. Till date RNTCP as on June 2013, >2,29,796 MDR TB Suspects have been tested and >32,622 confirmed MDR-TB patients have been initiated on standard treatment regimen for MDR TB under RNTCP, through 51 quality assured laboratories and 89 Drug Resistance-TB centers.

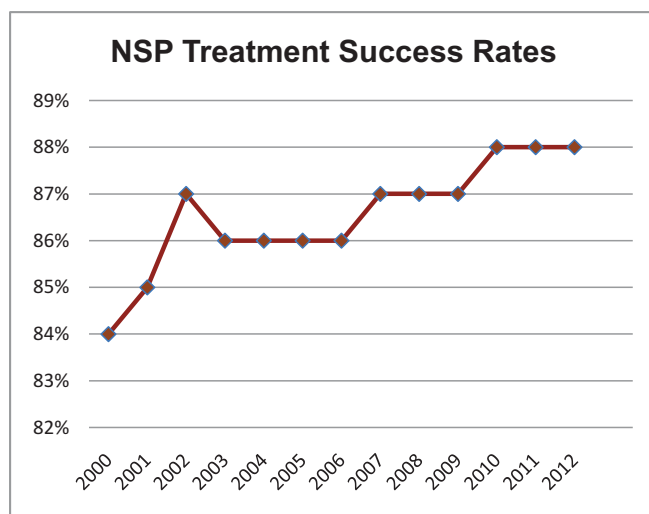
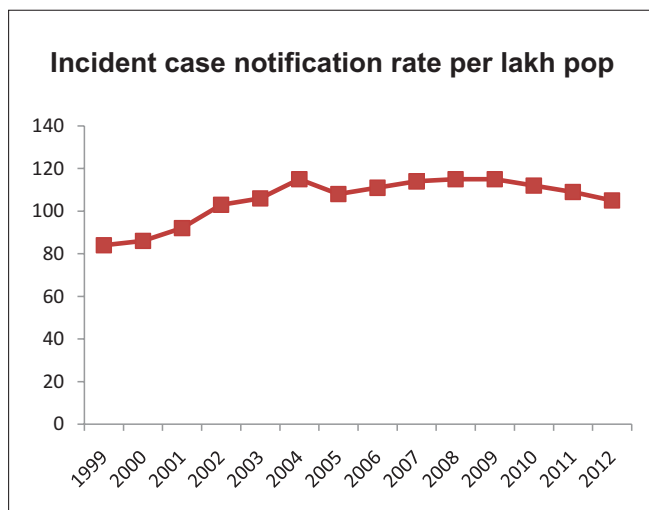
#### TB HIV Collaboration

- NACP (National AIDS Control Programme) & RNTCP have developed "National framework of Joint TB/HIV Collaborative activities" in 2007 and revised it in 2009. The framework articulates the policy of TB/HIV collaborative activities in the country.
- In 2012, out of total registered cases, HIV status of 8,21,807 (56%) TB patients was known of them about 44,063 were HIV positive. 92% of these patients were put on CPT while 74% of them received ART.
- The intensified TB-HIV package was scaled up in the entire country in June 2012.
- In 2013, out of total registered cases (7,25,332) in first two quarters, HIV status of 4,57,572 TB patients was known of them about 22,355 were HIV positive.

#### Impact of the programme

Prevalence of all forms of TB has been brought down from 465/ lakh population (1990) to 230/ lakh population in 2012 and TB mortality in the country has reduced from over 38/lakh population in 1990 to 22/lakh population in 2012 as per the WHO global report 2013. The programme has been monitoring two important indicators, incident case notification rate and treatment

success rate among New Smear Positives, among many others. The indicators reflect that there has been consistent progress towards achieving Millennium Development Goals.



#### 6.4.2 Advocacy Communication and Social Mobilization (ACSM)

ACSM is a priority activity in the programme. The ACSM activities are inbuilt into the programme and are implemented intensively from the National level to the most peripheral level, the community. RNTCP has a well-conceived ACSM strategy in place. There is a dedicated IEC Resource Centre in the programme website with relevant communication materials in various languages for local use. RNTCP has established

its own branding of DOTS with a logo which has been widely recognized, further provision of dedicated human resources at State and district levels for ACSM activities has been made in the programme. In addition large number of partners are also associated with the Programme for implementation of ACSM activities.

#### 6.4.3 Newer Initiatives:

**6.4.3.a TB Notification:** RNTCP provides quality assured diagnostic and treatment services to all the TB patients including necessary supportive mechanisms for ensuring treatment adherence and completion. But these services could not be made available to large number of patients availing services from private sector, as they were not reported to the programme.

To curb this situation, Government of India declared Tuberculosis a notifiable disease on 7th May 2012. Till date, 57000 health facilities have been registered and 35000 patients have been notified.

#### 6.4.3.b Nikshay (case based online patient tracking system)

RNTCP since implementation followed international guidelines for recording and reporting for Tuberculosis Control Programme with minor modifications. Epi-info based EPI-CENTRE software was being used for the purpose of electronic data transmission from district level upwards. Initially DOS version was in use and the programme shifted to windows version in 2007. However, the data available at district, state or national level is in aggregated form. Central TB Division (CTD) in collaboration with National Informatics Centre (NIC) has undertaken the initiative to develop a Case Based Web Based application named Nikshay to Tuberculosis surveillance in the country & individual patient wise monitoring & tracking of TB treatment.

Till date, 1.9 million cases have been registered in Nikshay. The system has been extended to include drug resistant TB cases, online referral and transfer of patients.

#### 6.4.3.c Ban on TB Serology

The serological tests are based on antibody response, which is highly variable in Tuberculosis (TB) and may reflect remote infection rather than active disease.

Currently available serological test are having poor specificity and do not provide direct evidence of active TB in infectious material. The World Health Organization experts Group and Strategic and Technical Advisory Group for Tuberculosis (STAG-TB) which reviewed the data and concluded that currently available commercial serological test provide inconsistent and imprecise estimates of sensitivity and specificity and strongly recommended that these test should not be used for the diagnosis of pulmonary and extra-pulmonary TB. The Gazette of India, Ministry of Health and Family Welfare (Department of Health and Family Welfare) has banned import, manufacture, sale, distribution and use of the serodiagnostic test kits for tuberculosis, with due approval of Hon'ble Union Minister of Health & Family Welfare.

#### 6.4.4 Twelfth Five Year Plan - Key Activities Proposed

In addition to the continuation of existing activities as per 11th five year plan the following key activities are proposed during the 12th five year plan for achieving the objectives of RNTCP including universal access:

- Ensuring early and improved diagnosis of all TB patients, through improving outreach, vigorously expanding case-finding efforts among vulnerable populations, deploying better diagnostics, and by extending services to patients diagnosed and treated in the private sector.
- Improving patient-friendly access to high-quality treatment for all diagnosed cases of TB, including scaling-up treatment for MDR-TB nationwide.
- Re-engineering programme systems for optimal alignment with NRHM at block level and human resource development for all health staffs.
- Enhancing supervision, monitoring, surveillance, and programme operations for continuous quality improvement and accountability for each TB case, with programme-based research for development and incorporation of innovations into effective programme practice.

#### 6.4.5 Financial Allocation to RNTCP

Proposed budget for the RNTCP under the XII<sup>th</sup> Five year plan is Rs. 4500.15 crores.

(in crores)

Year	Budget Outlay
2012-13	467.00
2013-14	710.00
2014-15	1100.04
2015-16	1076.82
2016-17	1146.29
<b>Total</b>	<b>4500.15</b>

### 6.5 NATIONAL PROGRAMME FOR CONTROL OF BLINDNESS (NPCB)

National Programme for Control of Blindness (NPCB) was launched in the year 1976 as a 100% centrally sponsored scheme with the goal of reducing the prevalence of blindness to 0.3% by 2020. Rapid Survey on avoidable Blindness conducted under NPCB during 2006-07 showed reduction in the prevalence of blindness from 1.1% (2001-02) to 1% (2006-07).

**Main causes of blindness are as follows:-** Cataract (62.6%) Refractive Error (19.70%) Corneal Blindness (0.90%), Glaucoma (5.80%), Surgical Complication (1.20%) Posterior Capsular Opacification (0.90%) Posterior Segment Disorder (4.70%), Others (4.19%) Estimated National Prevalence of Childhood Blindness /Low Vision is 0.80 per thousand.

#### 6.5.1 Main Objectives of the Programme:

- To reduce the backlog of avoidable blindness through identification and treatment of curable blind at primary, secondary and tertiary levels, based on assessment of the overall burden of visual impairment in the country;
- Develop and strengthen the strategy of NPCB for "Eye Health for All" and prevention of visual impairment; through provision of comprehensive universal eye-care services and quality service delivery;
- Strengthening and upgradation of Regional Institutes of Ophthalmology (RIOs) to become centre of excellence in various sub-specialities of ophthalmology and also other partners like Medical College, District Hospitals, Sub-district Hospitals, Vision Centres, NGO Eye Hospital;

- Strengthening the existing infrastructure facilities and developing additional human resources for providing high quality comprehensive Eye Care in all Districts of the country;
- To enhance community awareness on eye care and lay stress on preventive measures;
- Increase and expand research for prevention of blindness and visual impairment and
- To secure participation of Voluntary Organizations/ Private Practitioners in delivering eye care.

#### 6.5.2 Salient features/strategies adopted to achieve the objectives:

- Continued emphasis on free cataract surgery through the health care delivery system as well as by the involvement of NGO sector and private practitioners.
- Emphasis on the comprehensive eye care programmes by covering diseases other than cataract like diabetic retinopathy, glaucoma, corneal transplantation, vitreo-retinal surgery, treatment of childhood blindness etc. These emerging diseases need immediate attention to eliminate avoidable blindness from the Country.
- Reduction in the backlog of blind persons by active screening of population above 50 years, organizing screening eye camps and transporting operable cases to fixed eye care facilities.
- Refractive Errors comprises a major part of avoidable blindness. Screening of children for identification and treatment of refractive errors and provision of free glasses to those affected and belonging to poor socio-economic strata.
- Coverage of underserved area for eye care services through public-private partnership.
- Capacity building of health personnel for improving their knowledge and skill in delivery of high quality eye services.
- Information Education Communication (IEC) activities for creating awareness on eye-care within the community.
- Regional Institutes of Ophthalmology and Medical Colleges of the states to be strengthened in a phased

manner with latest equipments & training of manpower so that they can be upgraded as Centres of Excellence in the regions

- The District Hospitals to be strengthened by upgrading infrastructure, equipment and providing adequate manpower like Ophthalmologists and PMOAs on contractual basis and provide earmarked funds for basic medicines and drugs.
- Continuing emphasis on primary healthcare (eye care) by establishing Vision centres in all PHCs with a PMOA in position.
- Multipurpose District Mobile Ophthalmic Units better coverage.

#### 6.5.3 New Initiatives introduced during the 12<sup>th</sup> Five Year Plan:

Out of a total projected budget of Rs. 2800 crore, a provision of Rs. 2506.90 crore has been approved by the Empowered Programme Committee (EPC) for continuation of NPCB during the 12th Five Year Plan. A provision of Rs. 130 crore has been approved by the Expenditure Finance Committee (EFC) for continuing tertiary level activities during the years 2013-14 and 2014-15 under NPCB. The following new initiatives have been introduced under the programme during the 12th Five Year Plan:

- Provision for setting up 400 Multipurpose District Mobile Ophthalmic Units @ Rs.30 lakh per unit in the District Hospitals of States/UTs.
- Provision for distribution of 10 lakh spectacles @ Rs.100/- per spectacles to old persons suffering from presbyopia.

#### 6.5.4 Major performance indicators

Budget allocation and expenditure

(Rs. in crore)

Year	Budget allocated (BE/FE)	Expenditure
2009-10	253.02	252.90
2010-11	202.58	202.41
2011-12	222.00	221.64
2012-13	210.00	212.46
2013-14	102.34	101.94

### 6.5.5 Physical targets and achievements Cataract operations

(Rs. in crore)

Year	Target	Cataract operations performed	% surgery with IOL
2009-10	60,00,000	58,10,684	95
2010-11	60,00,000	60,32,724	95
2011-12	70,00,000	63,49,205	95
2012-13	66,00,000	63,02,894	95
2013-14	66,00,000	52,15,583*	95

### School Eye Screening Programme

(Rs. in crore)

Year	No. of free spectacles provided to school age group children with refractive errors	
	Target	Achievement
2009-10	4,73,472	5,05,843
2010-11	6,00,000	6,26,839
2011-12	6,00,000	6,58,061
2012-13	10,00,000	7,08,861
2013-14	9,00,000	3,70,876*

### Collection of donated Eyes

(Rs. in crore)

Year	Collection of donated eyes	
	Target	Achievement
2009-10	55,000	46,589
2010-11	60,000	44,926
2011-12	60,000	49,410
2012-13	50,000	53,543
2013-14	50,000	34,492*

### Training of Eye Surgeons

(Rs. in crore)

Year	Target	No. of eye surgeons trained
2009-10	400	400
2010-11	400	350
2011-12	400	350
2012-13	500	350
2013-14	500	125

\* = Reports for the month of February and March, 2014 are awaited from most of the States/UTs

### 6.6 NATIONAL IODINE DEFICIENCY DISORDERS CONTROL PROGRAMME (NIDDCP)

Iodine is an essential micronutrient required daily at 100-150 micrograms for the entire population for normal human growth and development. Deficiency of iodine can cause physical and mental retardation, cretinism, abortions, stillbirth, deaf, mutism, squint, loss of IQ, compromised school performance & various types of goiter etc. Results of sample surveys conducted in 365 districts covering all the States/Union Territories have revealed that 303 districts are endemic where the prevalence of Iodine Deficiency Disorders is more than 10%. No State/UT is free from IDD.

#### 6.6.1 Objectives:

- Surveys to assess the magnitude of the Iodine Deficiency Disorders in districts.
- Supply of iodized salt in place of common salt.
- Resurveys to assess iodine deficiency disorders and the impact of iodized salt after every 5 years in districts.
- Laboratory monitoring of iodized salt and urinary iodine excretion.
- Health Education and Publicity.

#### 6.6.2 Significant Achievements:

- Consequent upon liberalization of Iodized salt production, Salt Commissioner has issued licenses to 824 salt manufacturers out of which 532 units have commenced production. These units have an annual production capacity of 120 lakh Metric tonnes of Iodized salt.
- The production/supply of iodized salt from April 2013 to March 2014 was 58.64 lakh tones and 55.08 lakh tones.
- Notification banning the sale of non-iodized salt for direct human consumption in the entire country is already issued under Food Safety & Standards Act 2006 and Regulations 2011.
- For effective implementation of National Iodine Deficiency Disorders Control Programme 33 States/UTs have established Iodine Deficiency Disorders Control Cells in their State Health Directorate.



- In order to monitor the quality of Iodized salt and Urinary Iodine excretion 33 States/UTs have already set up Iodine Deficiency Disorders monitoring laboratories while the remaining States are in the process of establishing the same.
  - For estimation of iodine content in iodized salt, a total of 39921 salt samples were analyzed in the year 2013-14 (up to February/March, 2014) out of which 37412(93.71%) salt samples were found confirming to the standard (iodine content > 15 ppm).
  - For estimation of urinary iodine excretion for bio-availability of iodine 10472 urine samples were collected and analyzed in the year 2013-14 (February/March, 2014) out of which 9991 samples were found confirming to the standard (95.0%).
  - For ensuring the quality of iodized salt at consumption level, a total of 1560818 salt samples were tested by salt testing kit during the year 2013-14, (February/March, 2014) out of which 1149118 (74.0%) salt samples indicated normal quality i.e. salt having iodine > 15 ppm.)
  - Global IDD Prevention day was observed throughout the country on 21st October, 2013. Messages on benefits of consumption of iodized salt in prevention and control of IDD were published in National & Regional Newspapers on the eve of Global IDD Prevention Day through DAVP.
  - Visible goitre has reduced significantly in the country.
- 6.6.3 Information Education & Communication Activities:**
- a. **Activities through Doordarshan:-** IDD Spots containing messages on consequences of Iodine Deficiency Disorders and benefits of consuming iodated salt are being telecast through the National Network of Doordarshan daily and telecast of the IDD messages under Swasth Bharat Programme. Telecast of message of Secretary (HFW) on National & Regional channels of Doordarshan on Global IDD Prevention Day 21st October, 2013.
  - b. **Activities through All India Radio:-** IDD Spots containing messages on major consequences of iodine deficiency disorders and benefits of consuming iodated salt in all 18 regional languages are broadcast by the All India Radio through its 37 Vividha Bharthi channels, 129 primary channels and 24 F.M channels (including 4 FM Gold channels).
  - c. **Activities through Railways:-** Messages on IDD and consumption of Iodated salt are being carried out through computerized railway reservation tickets in 8 different railway zones covering approximately covering 16 States/UTs.
  - d. **Activities through the State Health Directorate:-** State Governments have also been provided grants for undertaking IEC activities at the local level in their regional languages to make the impact of IEC activities more effective including celebration of Global IDD Prevention Day in all districts.

