

**DISEASE CONTROL
PROGRAMMES
(NHM)**

Chapter

5

5.1 INTRODUCTION

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

5.2 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, three diseases namely Kala-azar and Lymphatic Filariasis and malaria have been targeted for elimination. 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 (JE), 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.

5.2.1 Malaria:

Malaria is an acute parasitic illness mainly caused by Plasmodium vivax and Plasmodium falciparum in India. However sporadic cases of P.malariae and P.ovale are also reported. 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 as it is sometimes prone to develop severity and death, if not treated early. There are reports of P.knowlesi also by ICMR in Andaman and Nicobar Islands. The presence of multiple vectors in different eco-types adds to the complexity of malaria transmission.

Epidemiological Situation:

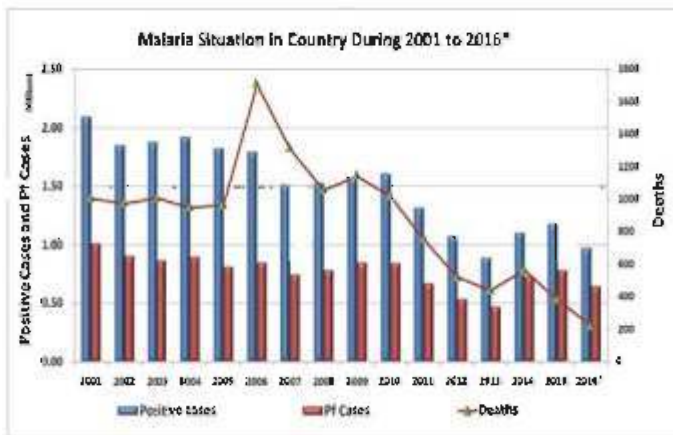
The data on malaria surveillance is generated at Village/ sub-centre level, which are compiled at PHC/Block Level & sent to Districts. Districts in turn submit the PHC wise data to State from where it is compiled district-wise & transmitted to Directorate of NVBDCP.

The disease burden due to malaria has been declining gradually since the implementation of the Modified Plan of Operation (MPO) - National Malaria Eradication Programme (NMEP) in 1976. This decline was further assisted by the introduction of ACT and RDT for treatment of malaria cases in 2005 and subsequently the introduction of LLINs in 2009. However, there has been a slight increase in cases in 2015 as compared to previous year but deaths decrease during the same period. This could be attributed to the occurrence of focal outbreaks in States/ UTs in previous years and better surveillance since the introduction of Bivalent RDT in 2015.

The trend (Fig.1) shows that cases have consistently declined from 2.08 million to 0.97 million during 2001 to 2016 (till November). Similarly Pf cases have declined from 1.0 to 0.64 million cases during the same period. This indicates declining trend of overall endemicity of malaria in the country.

Out of total malaria cases reported between 2000 and 2016, half the number of cases were caused due to *P. falciparum*. Deaths due to malaria declined steadily from 2009- 2016, but showed an increase in 2014 as per reports received from States/ UTs. Surveillance has steadily increased from 2008- 2016 but still remains below the desirable level of ABER equal to 10%.

Fig.1: Trends of Malaria cases, Pf cases and deaths



As depicted above, there has been a 52% reduction in total malaria cases, 39% reduction in Pf cases and 76% reduction in deaths in 2016 (till November) as compared to 2000. The proportion of Pf cases and Pv cases out of total malaria cases during the last three years is shown in Fig. 2 below:

Fig.2: Proportion of Pf and Pv cases from 2014- 16* (Provisional)

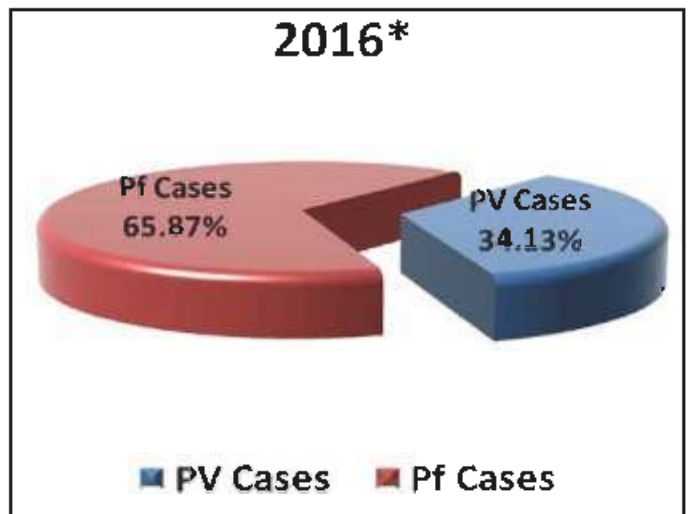
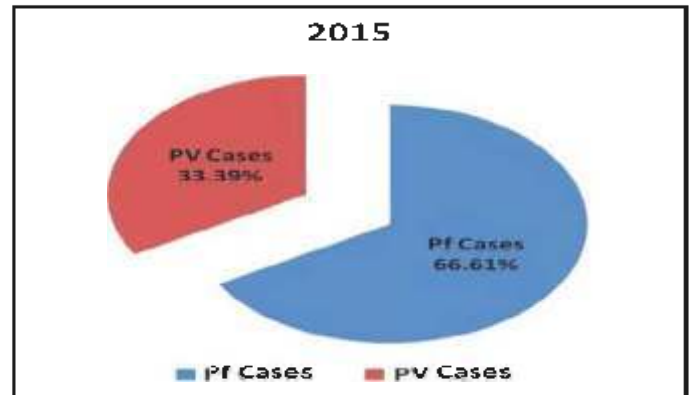
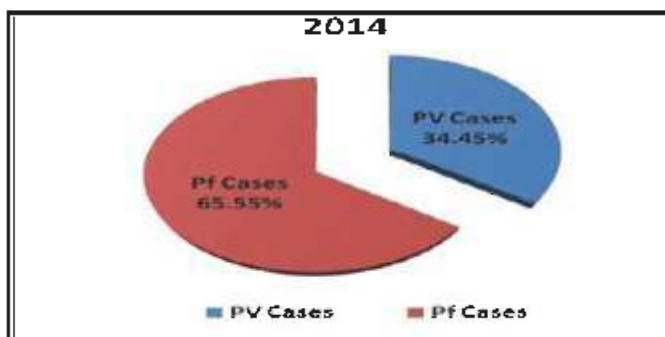
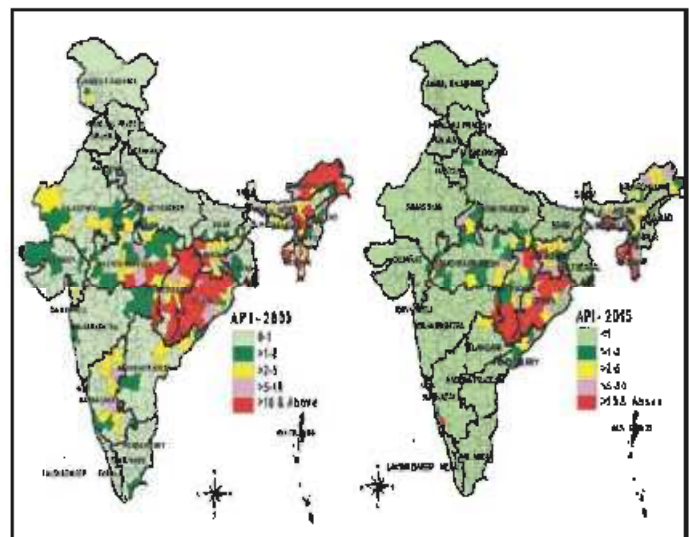


Fig. 3: Comparative status (2012 Vs 2015) of distribution of districts based on API



Further analysis of malaria incidence from 2012-15 has been done and State/UTs have been classified in

Stratification of Districts based on API

Sl. No.	API	2012		2013		2014		2015	
		No:	%	No.	%	No.	%	No.	%
1	API > 10 (10.1 & more)	32	4.90	25	4.02	3	0.40	38	5.60
2	API 5 To 10 (5.1-10)	29	4.40	26	3.73	8	1.20	18	2.65
3	API 2 To 5 (2.1-4.99)	48	7.30	45	6.71	37	5.50	53	7.82
4	API 1 To 2 (1-1.99)	58	8.80	58	8.79	40	6.00	45	6.64
5	API ≤ 1 (0-.99)	492	74.70	516	76.50	589	87.00	524	77.29
Total		659		670		677		678	

different categories based on Annual Parasite Incidence (annual cases per thousand population). The results are indicated in above:

The analysis of district-wise API reveals that the number of districts with API>2 have continuously decreased.

The number of districts with API <1 has increased from 492 in 2012 to 524 in 2015.

The number of districts with API >10 has decreased from 32 in 2012 to 38 in 2015.

Achievement:

- 25.33% reduction has been achieved in malaria cases against the target of reducing malaria morbidity by 25% by the year 2015 (baseline data of 2007), Similarly 78.10% reduction in deaths due to malaria has been achieved in 2015 against the target of 50 % reduction in malaria mortality.
- Global Fund supported Intensified Malaria Control Project (IMCP-3) (October 2015-

December 2017) provides support for Malaria control in 7 NE States and Odisha. The details are as under:

- ❖ Global fund is providing financial support for IMCP - 3 to cover all districts of 7 NE states plus Odisha. The total proposed budget for NE states plus Odisha is USD 107,452,367.
- ❖ This project is a continuation of Global Fund Supported (IMCP-3) (October 2015-December 2017) in the 7 NE States plus Odisha to sustain the gains achieved during the IMCP with additional inputs like:
 - Contractual Human Resource.
 - Mobility Support like Motorcycles & POL Funds for effective M&E.
 - Strengthening of National & State Project management units by provision of contractual consultants and support staff.

- Provision of LLIN to high risk population for effective vector control.
- Provision of Bivalent Rapid Diagnostic Test Kits and ACT Combi packs for Early Diagnostic and complete treatment of Malaria Cases for communities residing in remote, hilly and difficult to reach areas.
- ◆ The first phase (IMCP-I) of two years has ended in September 2012 and the second phase (IMCP-II) of three years ended in September 2015. Intensified Malaria Control Project-3 (IMCP-3) has started from October 2015 and shall be completed on 31.12.2017.
- ◆ The epidemiological indicators at the end of year 2015 show that the surveillance has increased by 30.69% in project States as compared to 20.39% increase in remaining States of India by year 2015 taking 2008 as baseline. There is 0.49% reduction in malaria cases in project States in 2015 as compared to 2008 against 41.37% reduction in remaining States of the country. There is 68.71% reduction in deaths in project States during the same period as compared to 77.94% reduction in the remaining States of the country.

Current status of manpower recruitment

- 80 District VBD consultants out of 95 sanctioned post, have been recruited in malaria Control Project under GFATM.
- 242 MTS out of 549 sanctioned posts are in position.
- 54 Laboratory Technicians out of 178 sanctioned posts are in position especially for Malaria Control activities.
- 13 LTs at Sentinel sites are sanctioned, however 12 are in position.

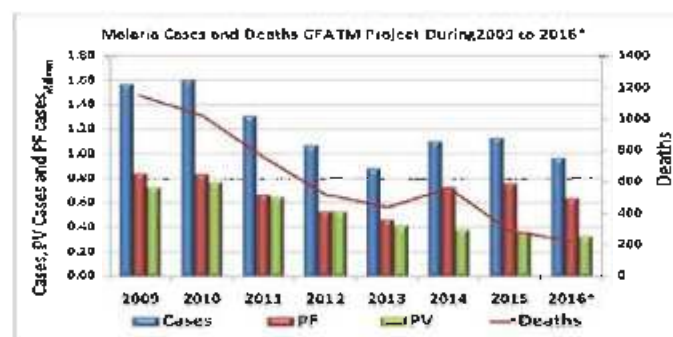
The strategies of the project are early diagnosis and complete treatment, integrated vector control

including promotion of ITN (LLINs), 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.

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 Officers /Lab. Technicians/ Volunteers etc.
- Commodities such as Long-Lasting Insecticidal Nets (LLINs), bivalent Rapid Diagnostic Tests for quick diagnosis of Malaria, alternate drugs i.e. Artemesinin based Combination Therapy (Artemether-Lumefantrine) 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).

Achievements: The malaria cases have progressively declined from 233,625 (2009) to 136,256 (2014); API



declined from 5.21 per thousand population in 2009 to 2.81 per thousand population in 2014, respectively. There is 56% decline in confirmed deaths due to malaria from 487 in 2009 to 216 in 2014.

The number of districts with API<1 has almost doubled from 25 in 2009 to 47 in 2015, indicating a shrinking malaria map in these States.

National framework for malaria elimination in India 2016-2030

Encouraged by the success achieved in malaria control in recent years, the vision of India's malaria control programme has been now shifted to sustained malaria elimination to contribute more effectively to improved health and quality of life of the people. The National Framework for malaria elimination in India 2016-2030 was launched in February 2016.

Vision: Eliminate malaria nationally and contribute to improved health, quality of life and alleviation of poverty.

Goals: In line with the WHO Global Technical Strategy (GTS) for Malaria 2016–2030 and the Asia Pacific Leaders Malaria Alliance Malaria Elimination Roadmap, the goals of the National Framework for Malaria Elimination in India 2016–2030 are:

- Eliminate malaria (zero indigenous cases) throughout the entire country by 2030; and
- Maintain malaria-free status in areas where malaria transmission has been interrupted and prevent re-introduction of malaria.

Objectives

The National framework for malaria elimination in India has formulated the following objectives:

- By 2022, transmission of malaria interrupted and zero indigenous cases attained in all 26 States/UTs that were under Categories 1 and 2 in 2014;
- By 2024, incidence of malaria reduced to less than 1 case per 1000 population in all States and UTs, and their districts;
- By 2027, indigenous transmission of malaria interrupted in all States and UTs of India; and
- By 2030, malaria eliminated throughout the entire country and re-establishment of transmission prevented.

Programme phasing

Malaria elimination in India will be carried out in a phased manner because the various States/UTs have different levels of malaria burden. While some low burden States are in a position to plan action for malaria elimination right now, the high burden States will need to reduce the malaria burden first before proceeding towards elimination. Therefore, States and UTs have been categorized into phases, based on their API as primary criterion with due consideration given to ABER and SPR as secondary criteria. The categorization is given in Table -1.

Table -1: Classification of States/UTs for malaria elimination in India

Category	Definition
Category 0 <i>Prevention of re-establishment phase</i>	States/UTs with zero indigenous cases of malaria (Currently, no State/UT)
Category 1 <i>Elimination phase</i>	States/UTs with API less than one, and all their districts reporting API < 1 (15 States/UTs)
Category 2 <i>Pre-elimination phase</i>	States/UTs with API < 1, but some of their districts reporting API = 1 (11 States)
Category 3 <i>Intensified control phase</i>	States/UTs with API = 1 (10 States/UTs)



Release of Operational Manual for Malaria elimination by DGHS

Epidemiological Situation:

The status of total cases, Pf cases, deaths and API from 2005 to 2016 (provisional) is given in the table and the Graph as follows. The state-wise data on malaria cases & deaths since 2005 is at Table-2.

Table -2

Malaria Situation in the country during 1996-2016*				
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	1.01	0.53	519	0.88
2013	0.88	0.46	440	0.72
2014	1.10	0.72	562	0.89
2015	1.17	0.78	384	0.92
2016	0.97	0.64	223	0.76

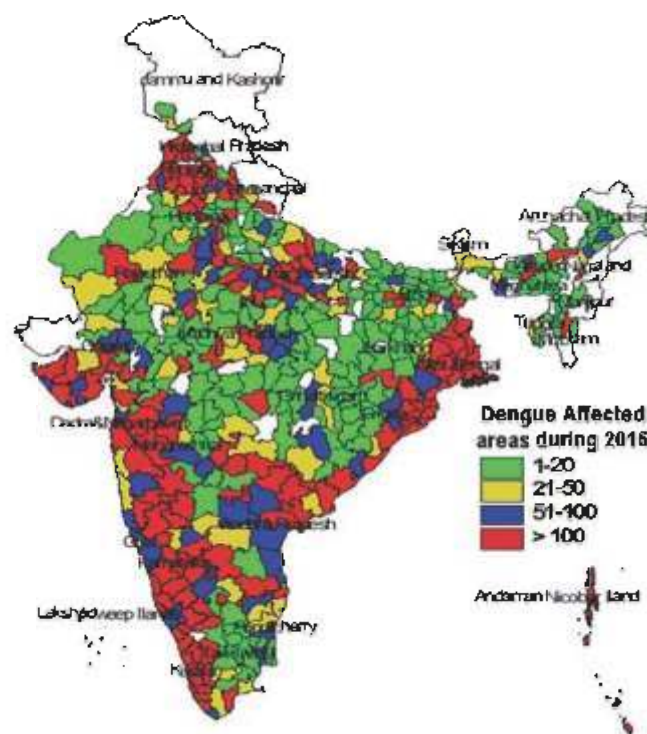
*Provisional

5.2.2 Dengue

Disease Burden

Dengue is endemic in 29 States and 6 UTs (except Lakshadweep). Recurring outbreaks of Dengue have been reported from Andhra Pradesh, Assam, Delhi, Goa, Haryana, Gujarat, Karnataka, Kerala, Maharashtra, Odisha, Puducherry, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh and West Bengal.

Every year during the period of July-November, there is an upsurge in the cases of Dengue/DHF in northern parts of the country. However, in the Southern and Western parts of the country, the disease has become perennial.



During 2015, a total of 99,913 cases and 220 deaths were reported from 29 States and 6 UTs, whereas, in 2016 till 30th November, a total of 97,313 cases and 197 deaths were reported from 29 States and 6 UTs. Maximum cases were reported from West Bengal (11069 report till 14th Sept only) followed by Punjab (10133), Odisha (8308), Gujarat (7275), Uttar Pradesh (7190), Kerala (6807), Maharashtra (6223), Karnataka (5553), Assam (4575), Delhi (4200), Rajasthan (3632), Andhra Pradesh (3100), D&N Haveli (2821), Telangana (2565), Haryana (2440), Madhya Pradesh (2321), Tamil Nadu (2176) and Utrakhand (2146). The Case Fatality Ratio (CFR, deaths per 100 cases) which was 3.3 % in 1996 has come down to 0.3% in 2014 and 0.2% in 2015 and 2016 because of better management of Dengue cases. The state-wise dengue situation during 2015 and 2016 (till 30th November) presented at Fig.-4.

Dengue Morbidity Trend and Case Fatality Ratio - Country Scenario

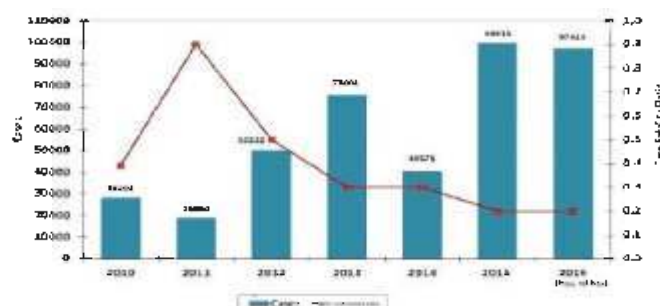
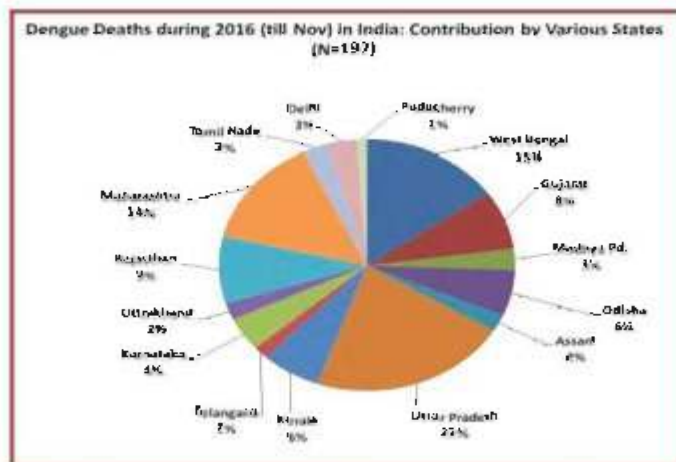
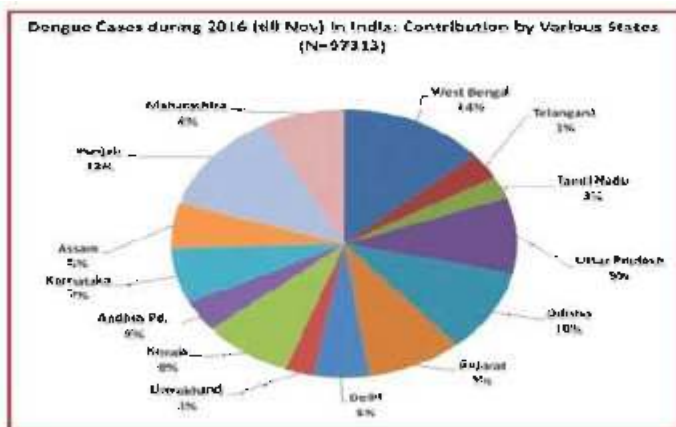


Fig.4: Dengue Cases and Deaths during 2016 (Provisional)

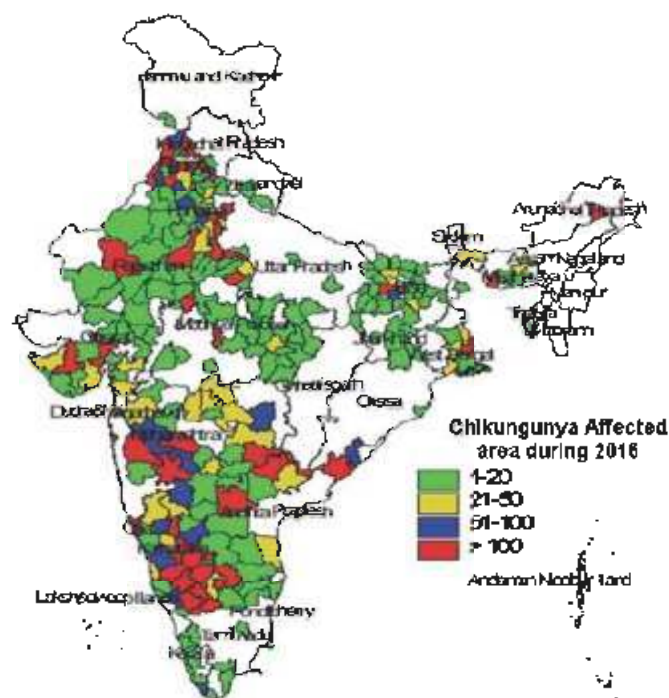


5.2.3 Chikungunya

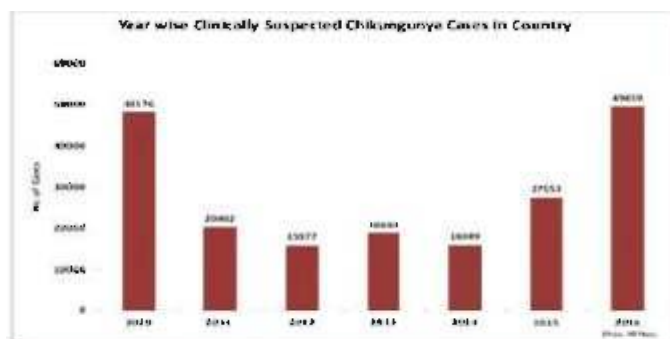
Chikungunya is a debilitating viral illness caused by Chikungunya virus. The disease re-emerged in the country after a gap of almost three decades. Chikungunya outbreaks typically result in large number of cases but deaths are rarely encountered. This disease is also transmitted by *Aedes* mosquito, both *Ae.egypti* and *Ae.albopictus* can transmit the disease. Symptoms of Chikungunya fever are most often clinically indistinguishable from those observed in dengue fever. However, unlike dengue, haemorrhagic manifestations are rare and shock is not observed in Chikungunya virus infection. It is characterized by fever with severe joint pain (arthralgia) and rash. Joint pains sometimes persist for a long time even after the disease is cured. There is neither any vaccine nor drugs available to cure the Chikungunya and the cases are managed symptomatically.

Disease Burden

After re-emergence of Chikungunya in 2006, the cases of clinically suspected Chikungunya cases reported every year but gradually declined till 2014. However, due to the report of increased numbers of cases by few States, the disease shows an upward trend in 2015 (Karnataka) and 2016 (Delhi and nearby States).



During 2016 (till 30th November), a total no. of 49659 clinically suspected chikungunya cases were reported from 28 States/UTs as against 27553 cases during 2015. The maximum cases were reported from Karnataka (12671) followed by Delhi (11915), Maharashtra (6185), Punjab (3777), Haryana (2749), Gujarat (1956), Uttar Pradesh (1947), Rajasthan (1686), Madhya Pradesh (1024), West Bengal (921), Andhra Pradesh (866), Telangana (583), and Bihar (539).



Control Strategy for Dengue and Chikungunya

As both Dengue and Chikungunya are transmitted by the same vector mosquito, programme strategies are also same for both the diseases. In absence of vaccine or specific drug against Dengue and Chikungunya infection, the control strategy mainly focuses on control of the vector mosquito. Elimination of the breeding sites of the vector mosquito at all levels, including individuals and community, is the only sustainable way to keep both the diseases under control.

A Mid Term Plan for prevention and control of Dengue and Chikungunya was developed in 2011 approved by Committee of Secretaries on 26.5.2011. The main components of strategy 'Octalogue' for Prevention and control of Dengue and Chikungunya are as follows:

- i. Surveillance - Disease and Entomological Surveillance.
- ii. Case Management - Laboratory diagnosis and Clinical Management.
- iii. Vector Management - Environmental management for Source Reduction, Chemical control, Personal protection and Legislation.
- iv. Outbreak response - Epidemic preparedness and Media Management.
- v. Capacity building- Training, strengthening human resource and operational research.
- vi. Behaviour Change Communication - Social mobilization and Information Education and Communication (IEC).
- vii. Inter-sectoral coordination - Health, Urban Development, Rural Development, Panchayati Raj, Surface Transport, Education sector and Water & Sanitation.
- viii. Monitoring and Supervision- Analysis of reports, review, field visit and feedback.

Emphasizing the role of community in Dengue Control a strategy document has been developed and shared with the States to strategize on Effective Community Participation and implement community-based programmes (also uploaded in the NVBDCP website www.nvbdc.gov.in).

For case management of both the diseases, National Guidelines were developed and shared with the States for wider circulation also uploaded in the NVBDCP website www.nvbdc.gov.in

Activities

During 2016, for prevention and control of Dengue and Chikungunya in the Country following activities were undertaken:

- **Dengue notifiable disease:** States have been requested to declare Dengue as notifiable disease by MoHFW vide letter No. 7-165/2016/NVBDCP/DEN dated 9th June 2016 and the same has been uploaded on the NVBDCP website for taking action accordingly by all the States and UT's. Dengue is notifiable at present in 8 States (Chandigarh, Delhi, Goa, Karnataka, Kerala, Maharashtra, Punjab and Tamil Nadu).
- **Capping of Dengue test at Rs 600/-:** States have been requested vide letter no. 7-119/2013/NVBDCP/DEN/Review Meeting-Pon 5th July to curtail out of pocket expenditure by fixing the rate for testing @ Rs. 600/-.

Diagnosis:

Strengthening of diagnostic facilities:

For augmenting diagnostic facilities, numbers of Sentinel Surveillance Hospitals (SSHs) with laboratory support has been increased to 542 across the country in 2016 from 110 in 2007 and linked with 15 Apex Referral laboratories (ARLs) with advanced diagnostic facilities for back up support for Dengue and Chikungunya.

Kit supply: IgM test kits are provided to these institutes through National Institute of Virology, Pune. Cost is borne by NVBDCP. In 2016 (till 30th

November), a total no. of 5582 Dengue (1 kit= 96 tests) and 2176 Chikungunya kits were provided by GoI to the SSHs and ARLs across the country.

ELISA based NS1 test for early detection of cases from 1st day of disease, is a decentralized item, for which funds are provided to the states under PIP for procurement as per the technical guidelines provided by NVBDCP.

Funding to SSHs and ARLs: Annual Contingency grants to each SSH (@ Rs. 1.00 Lakh) and ARL (@ Rs. 3.00 Lakhs) are provided through State to meet the operational cost.

Reviews: Periodic Reviews for Dengue and Chikungunya were carried out at higher level during 2016 are as below:

- Departmental Parliamentary Standing Committee reviewed on 29th September.
- Committees of Secretaries reviewed on 1st September.
- HFM reviewed on the situation and activities on 29th Jan, 1st Feb, 29th Apr, 1st July & 11th July, 14th & 16th September.
- Secretary reviewed on 21st January, 4th & 8th February, 24th August.
- DGHS reviewed on 1st February, 18th March, 5th September and 13th December.
- The Committee under Spl DGHS (PH) reviewed on 5th July, 9th & 14th September.

IEC/BCC

Focused IEC/BCC activities were carried out to generate awareness of the community:

- **Mann Ki Baat:** Hon'ble Prime Minister on 31st July during 'Mann Ki Baat' programme, asked to adopt measures for prevention of Dengue.
- **Observation of National Dengue Day:** First 'National Dengue Day' was observed on 16th May across the country emphasizing on initiation of pre-monsoon preventive activities.



Observation of First National Dengue Day on 16th May across the country

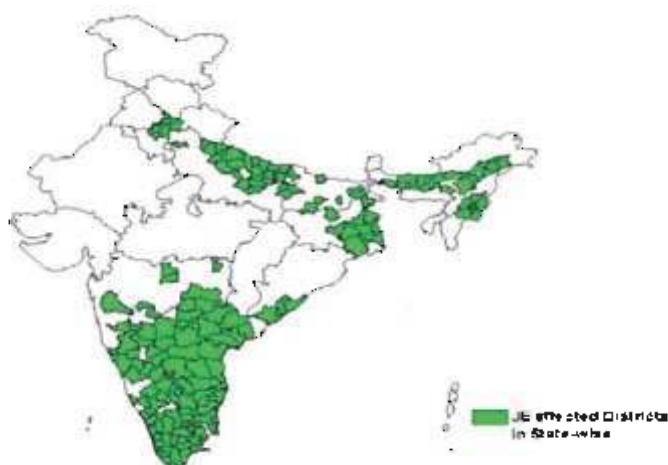
- **Launching of Mobile App:** A Mobile App 'India Fight Dengue' was launched by Hon'ble HFM on 'World Health Day' on 7th April for awareness generation of the Community on Dengue.
- **Newspaper advertisement:** released on 16th May across the country with the message of Hon'ble PM; followed by released on 8th, 11th, 18th & 25th September and 2nd October.
- **Television and Radio:**
 - i. Campaign was released through FM and AIR on Mobile App, 'India Fight Dengue' for one month from 14th June to 13th July. By AIR from 12th July to 11th August.
 - ii. Audio-Visual campaign through Doordarshan, Satellite TV channels, All India Radio, FM channels on Dengue ongoing since 23rd July.
 - iii. Radio jingles on Chikungunya are being released through FM and All India Radio from 5th September.
 - iv. Scrolling the messages on Chikungunya in TV through Doordarshan, Lok Sabha and Rajya Sabha TV has been initiated from 5th September.
 - v. Officers of NVBDCP participated in special episodes on Dengue and Chikungunya in Lok Sabha TV (Healthy India), DD News (Total

Health), DD National, NDTV and many other TV channels.

- **Social Media:** Tweets and SMS messages on Chikungunya and dengue are being released.
- **Public speeches:** Public Lecture in AIIMS on 9th May and 23rd September and at IIT, Delhi on 16th August on prevention and control of Chikungunya and Dengue.
- **Community based activities** - Following the instruction of Hon'ble HFM on 29th April, joint effective campaign intervention for prevention & control for specific target group in Delhi NCR has been initiated by NVBDCP, Delhi Govt. and MCD since 28th July. Meetings were held at various places for social mobilization of the community through opinion leaders and Municipal Councilors.
- On 18th March Dte. of NVBDCP participated US Embassy Health Exhibition to increase the knowledge and improve attitude of their staff members on vector borne diseases. During the event, messages were displayed through standees and flyers distributed with messages on diseases and their prevention.

5.2.4 Japanese Encephalitis

Japanese Encephalitis (JE) is a zoonotic disease which is transmitted by vector mosquito mainly belonging to *Culexvishnui* 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. The data on confirmed JE cases are also indicated in the Table.

Epidemiological Situation: JE has been reported from different parts of the country. The disease is endemic in 22 States of which Assam, Bihar, Tamil Nadu, Uttar Pradesh and West Bengal have been reporting more than 80% of disease burden. 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, 7825 cases and 1273 deaths due to Acute Encephalitis Syndrome (AES) including JE have been reported. During 2014, 10867 AES cases including JE and 1719 deaths have been reported. During 2015, 9854 AES cases including JE and 1210 deaths have been reported from the States. During 2016 (till 31.12.2016) 11159 AES cases including JE and 1264 deaths have been reported from the States.

Vaccination:

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 campaign in 2006 with single dose live attenuated JE (SA- 14-14-2) for children between 1 and 15 years of age which is followed by one dose under Routine Immunization (RI) at the age of 16-24 months to cover the new cohorts. Further after recommendation of the expert group, two dose of JE vaccine first at the age of 9 months and second at the age of 16-24 months have been incorporated under RI since April 2013. However, 198 districts have been covered under JE Vaccination (till November, 2016).

Adult JE vaccination have been completed in 14 districts of Assam including 9 districts with State initiative, selected blocks of 7 districts of Uttar

AES including JE cases and deaths



Pradesh and 9 districts of West Bengal.

Sentinel Sites:

Numbers of Sentinel sites have gradually been increased from 51 to 130. JE test kit (MAC ELISA) supplied free of cost to the endemic States. Apex Laboratories increased from 12 to 15 for testing of non JE pathogens for AES cases.

496 JE Kits have been supplied in 2016 till date 30.12.2016. 406 kits were supplied in 2015.

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.

National Programme for Prevention and Control of JE/AES

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. GoM met four times (21st November, 25th November, 9th 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 Tamilnadu, with involvement of following Ministries:

1. Ministry of Health & Family Welfare as the nodal ministry
2. Ministry of Drinking Water Supply & Sanitation
3. Ministry of Housing and Urban Poverty Alleviation

4. Ministry of Women & Child Development
5. Ministry of Social Justice & Empowerment

The major thrust areas are:

- 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

5.2.5 Kala-azar

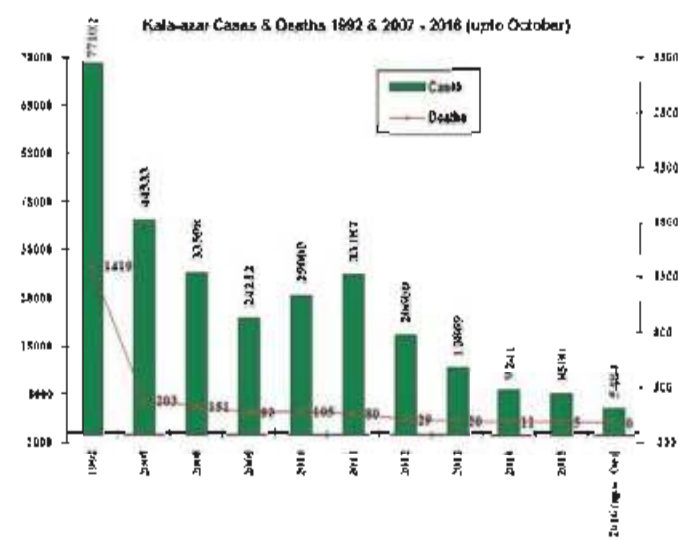
Kala-azar or Visceral Leishmaniasis is a complex disease, called leishmaniasis and is caused by the trypanosomatid parasite *Leishmaniadonovani*. In the Indian sub-continent, it is transmitted by the sand fly, *Phlebotomusargentipes*. The disease presents with symptoms of fever of long duration (more than two weeks) with splenomegaly, anaemia and progressive weight loss. In endemic areas, children and young adults are its principal victims. Without timely treatment the disease is fatal.

Kala-azar is presently endemic in (33) districts of Bihar, (4) districts of Jharkhand, (11) districts of West Bengal besides occurring in sporadic form in (6) districts of eastern Uttar Pradesh. An estimated 130 million population is exposed to the risk of Kala-azar in the endemic districts of four States.

The peak annual incidence of Kala-azar was seen in 1992, when 77102 cases and 1419 deaths were reported from the endemic States. A vigorous campaign of case detection and indoor residual

spraying with DDT was taken up resulting in sharp decline within a period of 2 years. Government of India launched a centrally sponsored Kala-azar control Programme in 1990-91. The programme was intensified during the year 1991 resulting in reduction of morbidity and mortality to 22625 cases in 1995. The annual incidence of disease has come down from 20600 cases in 2012 to 8500 cases in 2015 & deaths 29 to 5 respectively.

The National Health Policy (2002) envisaged the Elimination of Kala-azar by 2010 in the country by bringing the incidence of Kala-azar to less than one case per 10,000 population at the block PHC level which has been revised to 2015 and further revised to 2017 or earlier during "Health Sector" review held on 14th March, 2016.



Under the elimination programme the Central Government provides 100% operational cost to the State Governments, besides anti-Kala-azar medicines, drugs and insecticides.

In order to achieve the goal of elimination, the following objectives and strategies have been outlined:

Objectives

- Reducing the incidence of Kala-azar in the endemic communities including the poor, vulnerable and un-reached populations
- Reducing case fatality rates due to Kala-azar

- Treatment of Post Kala Azar Dermal Leishmaniasis (PKDL) to reduce the parasite reservoir
- Prevention and treatment of Kala-azar-HIV-TB co-infections

Strategy:

- Early diagnosis & complete treatment (EDCT)
- Integrated Vector Management including Indoor residual spraying (IRS)
- Advocacy, Communication for Behavioral Impact and Inter-sectoral convergence
- Capacity Building
- Supervision, Monitoring and Evaluation

The analysis of block PHC incidence revealed that the number of endemic blocks PHC have increased from 514 in 2007 to 628 in 2015. This could be attributed to improved case detection. In 2015 out of 628 block PHCs 492 (78%) have reported Kala-azar cases less than 1 per 10,000 population at block PHCs. 136 (22%) block PHCs are still showing more than one case per 10,000 population during 2015.

5.2.6 Vector Control

Indoor Residual Spray with DDT was the main vector control method in prevention & control of Kala-azar. During 2016, 39 districts (33 in Bihar, 4 in Jharkhand & 2 in West Bengal) received IRS with Synthetic Pyrethroid. During 2015, two rounds of Indoor Residual Spray with DDT (50%) and Synthetic was completed in 4 endemic States and spray coverage varied between 77% to 85%. The State-wise details are as under:

Sl. No	State	Targeted Population (in millions)	Population Covered (in millions)	Coverage %
1	Bihar	33.78	31.16	92.26
2	Jharkhand	2.27	2.06	92.20
3	West Bengal	1.11	1.00	89.50
4	Uttar Pradesh	0.52	0.36	68.73
	Total	37.69	34.62	91.85

During 2017 it is proposed to cover all the 54 districts with Synthetic Pyrethroid (Alphacypermethrin 5%)

Initiatives during 2016

The programme has taken following initiatives realizing the goal of elimination:

A. Initiatives

1. Treatment with single day single dose Ambisome Injection to Kala-azar patient. This has improved compliance.
2. Strengthening of human resource component by involving development partners for supervised monitoring.
3. Ensuing supply of drugs & diagnostic kits.
4. IFC/BCC for community awareness & social mobilization.
5. Use of Synthetic Pyrethroid insecticide in 21 districts of endemic States during 2016 for better community acceptance and in all districts in States of Bihar, Jharkhand & West Bengal from 2017 with hand compression pumps.
6. Training of HMIS for online entry of cases is in progress in different districts of Bihar.
7. Kala-azar commission has been constituted under the Chairmanship of Dr. L.M.Nath, Ex. Dean & Director, AIIMS, New Delhi for validating the districts that have achieved elimination.

B. Allocation of funds

NITI Aayog has provisioned Rs. 20.00 crore to Bihar, Jharkhand & West Bengal for strengthening Kala-azar implementation issues.

C. Provision of incentives

1. Incentive to Kala-azar activist/health volunteer/ASHA @ Rs.300/- for referring a suspected case and ensuring complete treatment and Rs. 100/- during one round of indoor residual spray i.e. Rs. 200/- for both the

two rounds of spray and for generating awareness for acceptance of spray by the community.

2. Rs. 500/- as incentive to patient for loss of wages irrespective of drug regimen and Rs. 2,000/- to Post Kala-azar Dermal Leishmaniasis (PKDL) case.
3. Govt of Bihar is providing Rs. 6,600/ incentive to patient as loss of wages since February 2016 under Chief Ministers Kala-azar Relief Funds. This incentive is besides Government of India incentive of Rs.500/- Now a Kala-azar patient will receive Rs.7,100/- which will improve treatment compliance.

Review/ meeting/workshop during 2015 & 2016

Kala-azar elimination has been reviewed periodically at highest level by PMO and at Hon'ble HFM level. Senior Officers have also reviewed the programme from time to time. Review/meeting/workshop held during 2016 is given below:

- Union Minister of Health & Family Welfare reviewed the status of the progress of Kala-azar Elimination Programme in the country on 7th April 2016.
- NVBDCP organized in collaboration with WHO a two days review meeting to oversee progress of implementation of National Road Map on Kala-azar Elimination at Patna on 21st – 22nd April 2016.
- HFM reviewed Kala-azar situation of Uttar Pradesh on 25th April 2016.
- Secretary, (HFW), GoI reviewed the progress of Kala-azar on 27th May 2016 with Principal Secretary of Jharkhand & Programme Manager of Bihar, West Bengal & Uttar Pradesh at Nirman Bhawan, New Delhi.
- Kala-azar Elimination activities were reviewed on 11.06.2016 in a dedicated session on “Progress on Kala-azar Elimination” in the XI Joint Annual Conference of Indian Society for Malaria & other Communicable Disease (ISMOC) and Indian Association of Epidemiologist (IAE) at Bengaluru

from 10th – 12th June, 2016.

- Vector borne disease including Kala-azar elimination was reviewed by Hon'ble MoS (H&FW) Shri F. S. Kulaste and Smt. Anupriya Patel on 13.7.2016 at Nirman Bhawan.
- A review meeting on India pharmacovigilance on Kala-azar was held on 10th August 2016 in WHO Office, Nirman Bhawan.
- DGHS reviewed VBD status including Kala-azar on 5th September, 2016 and Spl. DGHS reviewed Kala-azar situation on 23rd August, 2016.
- DGHS reviewed Kala-azar elimination on 5th September, 2016.
- Vector Borne Disease including Kala-azar elimination was reviewed by Joint Secretary on 12th and 30th September, 2016, respectively.
- Principal Secretary to Hon'ble Prime Minister reviewed the Kala-azar Elimination status on 28th October 2016 for accelerating the process of elimination and sustenance. The following actions have been taken in light of the directions given in the meeting:
 - i) Letters to Chief Ministers of Jharkhand, Uttar Pradesh and West Bengal from Hon'ble HFM for making Kala-azar incentive similar to Bihar (Rs. 6600/-) per case have been issued for motivating patients to come forward for voluntary treatment.
 - ii) Letter to Principal Health Secretary, Govt. of Bihar for making all the payments towards incentive to patients through Direct Benefit Transfer (DBT) and Aadhar linked, have been issued.
 - iii) SMS to BDOs from Hon'ble PM asking them to strictly monitor and supervise Kala-azar activities in hard core villages under process.
 - iv) WHO requested for carrying out Independent evaluation of Kala-azar as decided in the meeting.
 - v) Close monitoring in recently identified 151

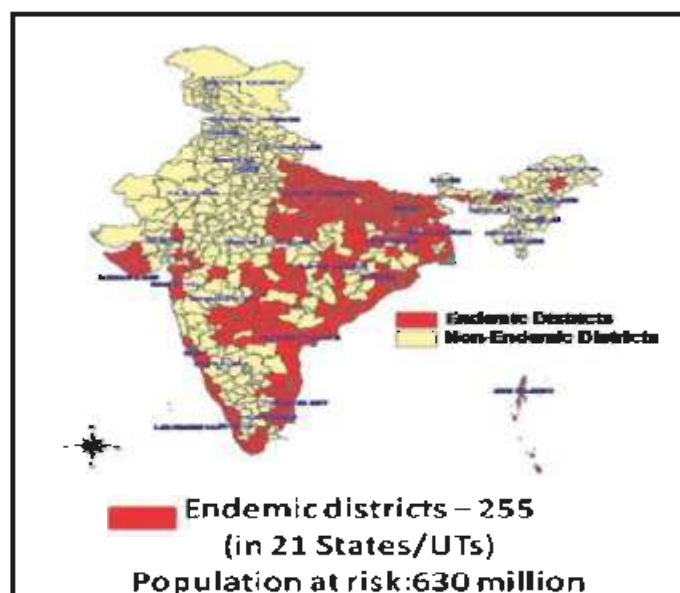
villages reporting >5 cases in 96 blocks of endemic State during 2015.

- vi) No stock out of drugs is ensured.
 - vii) Process of insertion of News paper advertisement for disseminating information about the incentives & other activities being undertaken by Government for Kala-azar Elimination, is in progress.
- One day review on progress of Kala-azar elimination at Patna was held by DGHS on 21st November 2016.

5.2.7 Elimination of Lymphatic Filariasis

Lymphatic Filariasis is transmitted by mosquito species – *Culexquinquefasciatus* and *Mansonia annulifera/ M.uniformis*. The vector mosquitoes breed in polluted water in drains, cesspits and in areas with inadequate drainage, etc. The disease is endemic in 250 districts (now 256 due to division of old districts) in 16 States and 5 UTs. The population at risk is about 630 million. Control of Lymphatic Filariasis though not fatal is of utmost importance as it causes personal trauma to the affected persons and associated social stigma and causes economic burden to the affected family.

The Government of India is signatory to the World Health Assembly Resolution in 1997 for Global Elimination of Lymphatic Filariasis. The National



Health Policy (2002) envisages elimination of Lymphatic Filariasis in India by 2015. The Global goal is 2020.

Strategy for Elimination of Lymphatic Filariasis

Annual Mass Drug Administration (MDA) of single dose of DEC (Diethylcarbamazine citrate) and Albendazole for minimum of 5 years or more to the eligible population at risk (except pregnant women, children below 2 years of age and seriously ill persons) to interrupt transmission of the disease.



Management of Filariasis

Home based management of lymphoedema cases and up-scaling of hydrocele operations in identified CHCs/ District hospitals /medical colleges.

Progress and Achievement

In pursuit to achieve goal of ELF, the Government of India during 2004 launched national campaign. The



strategy adopted is preventive chemotherapy (PCT) through annual Mass Drug Administration (MDA). Initially the MDA was observed with single drug - DEC, however, since 2006-07, co-administration of DEC + Albendazole was introduced for MDA. The logistic support in terms of training material, drugs and cash grant for programme implementation was provided by Government of India to all the endemic States/UTs on annual basis. Advocacy and IEC prototype materials have been provided every year to States and UTs for its dissemination in addition to media campaign from Central level.

Achievements:

- The population coverage during MDA has improved from 73% in 2004 to 89% in 2015.
- Overall Microfilaria rate has been reduced from 1.24% in 2004 to 0.3% in 2015.
- Phasing out of MDA has started through validation. The validation is done through Transmission Assessment Survey (TAS) using Immuno-Chromatographic Test (ICT) as per WHO guidelines. Till date, 86 districts out of 256 have successfully cleared 1st TAS including 4 districts which have also cleared 2nd TAS.
- Capacity building of the State and district officials was improved with the support of structured training sponsored by WHO. Since 2013, a total of 11 batches of training have been conducted on TAS and about 400 officials have been trained.
- Towards disability alleviation the programme has envisaged home based care for Lymphoedema through simple hygiene and surgical intervention for hydrocele cases. States and UTs have been able to line list about 8.5 lakhs Lymphoedema cases (swelling of limbs) and 4 lakh hydrocele cases. Out of 3.8 lakh hydrocele cases, the latest report indicates that about 1.4 lakh patients have been operated for hydrocele.

Capacity building has improved the performance of various functionaries. The initiative was also taken to involve senior faculties from various medical colleges for assessment of actual drug compliance.



Workshop & Training in progress



Approximately about 1.5 million health personnel including Medical Officers, Paramedicals, Drug Administrators, Lab. Technicians, etc are trained annually on MDA and Morbidity management.

Intensive social mobilization during MDA, have been carried out by various states/ UTs involving political/opinion leaders, decision makers, local leaders and community.



Assessment of Mass Drug Administration is regularly done through Medical Colleges to take

corrective measures. Such assessments revealed that there is gap between coverage and actual compliance of drug. However, the compliance has improved over a period of time but intensive social mobilization would still be required to bridge the gap between coverage and actual consumption so that the actual consumption rate of above 90% is achieved.

Transmission Assessment Survey (TAS)

As per WHO guidelines-2011, the districts having observed minimum five rounds of MDA with more than 65% coverage against total population at risk in implementation unit (population of district covered under MDA) are to be subjected to Transmission Assessment Survey (TAS) using Immunochromatographic test (ICT) for presence of circulating antigenemia in children born after initiation of MDA to know the current infection. This is required to take a decision for MDA stoppage. NVBDCP with the support of WHO and ICMR has trained about 400 officials for conducting TAS. Achievement is significant as till October, 2016, 86 districts with 136 evaluation units (approx. 195 million population) have successfully completed TAS and qualified for MDA stoppage. Forty three more districts will observe TAS during 2016-17. Goa, Udupi district of Karnataka and Puducherry have cleared 2nd successive TAS and maintaining post MDA surveillance.

During 2016, Mass Drug Administration (MDA) was targeted in 75 districts of 13 States. However, due to failure of districts in pre-Transmission Assessment Survey (TAS) (additional Mf survey) and TAS, numbers of districts who will observe MDA during 2016 have been increased to 127. Out of these, 52 districts have already observed MDA with overall coverage of 87% (prov.) and remaining districts will observe MDA on 10th February, 2017 in an integrated manner with National Deworming campaign.

Achievement (till December, 2016) 86 districts have successfully completed Transmission Assessment Survey exercise and qualified for MDA stoppage. During 2016-17, TAS is expected to be carried out in 43 districts.

New initiatives:

- Study on Triple drug (DEC + Albendazole + Ivermectin) therapy for MDA is under process in Yadgir district of Karnataka.
- Niti Aayog has provisioned Rs.20 crore to endemic states (Bihar, Gujarat, Karnataka, Maharashtra, Odisha, West Bengal & Uttar Pradesh) as an increment to the existing resource envelope.
- Consideration of introduction of DEC medicated salt as an adjunct to the existing MDA.

5.3 NATIONAL LEPROSY ERADICATION PROGRAMME (NLEP)

Introduction

Since its inception in 1983, the National Leprosy Eradication Programme (NLEP) has made spectacular progress. 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 levels, new cases are being continuously detected and these cases will have to be provided quality leprosy services through GHC system.

Background

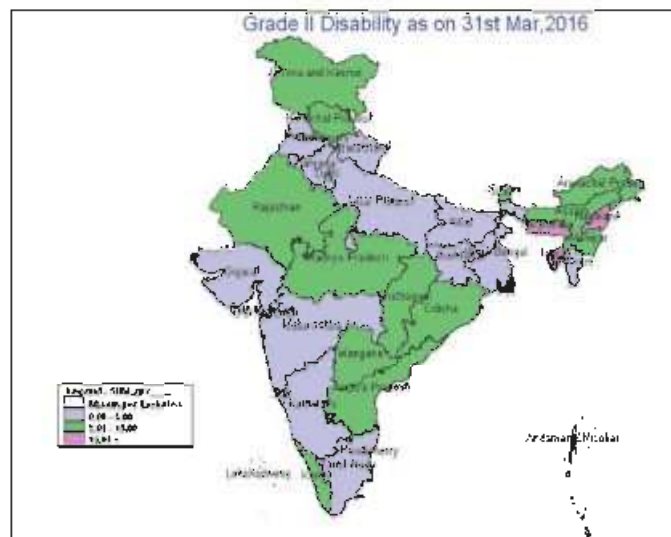
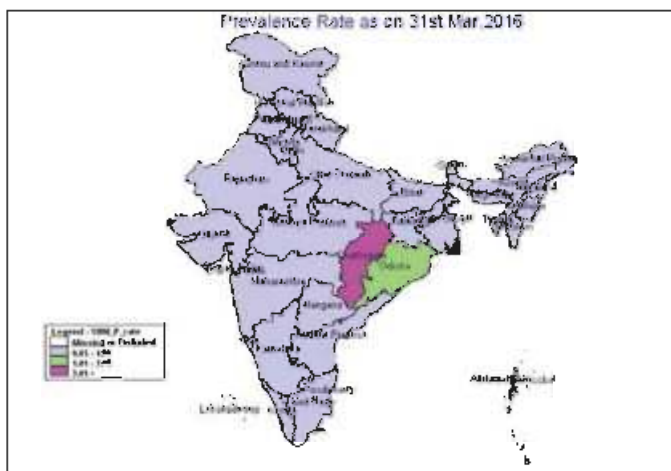
The National Leprosy Control Programme was launched by the Govt. of India in 1955. Multi Drug Therapy came into wide use from 1982 and the National Leprosy Eradication Programme was introduced in 1983. Since then, remarkable progress has been achieved in reducing the disease burden. India achieved the goal set by the National Health Policy, 2002 of elimination of leprosy as a public health problem, defined as less than 1 case per 10,000 population, at the national level in December 2005. 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

Epidemiological Situation:



indicating the Gr. II Disability Rate of 4.46 / million population.

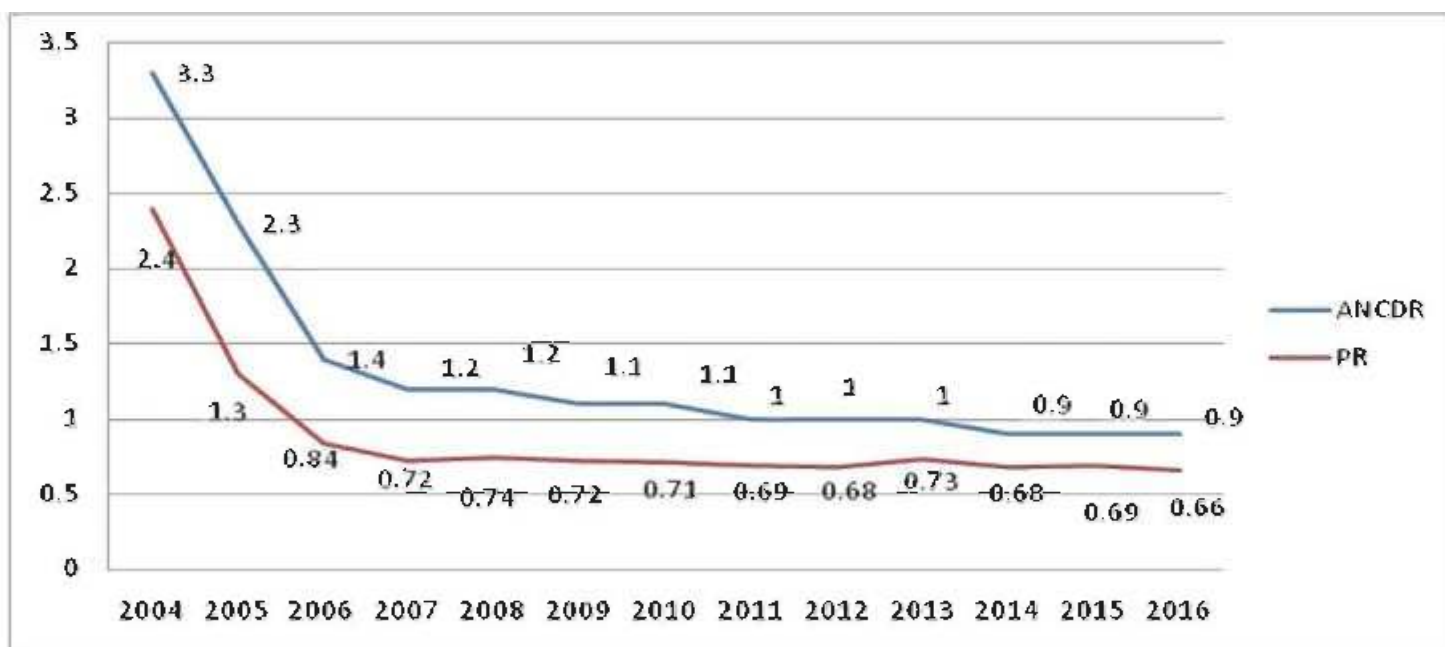
The trend of Prevalence and Annual New Case Detection Rate per 10,000 population since 2004 is shown in the Graph on next page:

- 34 States/UTs have achieved leprosy elimination status. One State (Chhattisgarh) and one U.T. (Dadra & Nagar Haveli) have yet to achieve elimination. Four States/UTs namely Odisha, Delhi, Chandigarh and Lakshadweep which had previously attained elimination have reported with PR>1/10,000 population, on 31st March 2016.
- Further, a total of 551 districts (82.36%) out of total 669 districts have PR<1/10,000 population as on March 31st 2016.
- At the end of March 2016, there were 86,028 leprosy cases on record (under treatment) giving a Prevalence Rate (PR) of 0.66 per 10,000 population. Till October 2016, 108778 leprosy cases are on treatment.
- In 2015-16, total 127334 new leprosy cases were detected and put under treatment giving Annual New Case Detection Rate (ANCDR) of 9.73 per 1,00,000 population. Till October 2016, 90581 new leprosy cases have been detected in the current year.
- A total of 5851 Gr. II disability were detected amongst the New Leprosy Cases during 2015-16,

1. District wise situation on the basis of ANCDR as on 31st March 2016 is as follows: 485 (72.50%) districts out of total 669, have ANCDR < 10 per 100,000 population and 80 districts have ANCDR > 20/100,000. Only 22 districts with ANCDR > 50/100,000 population are in Chhattisgarh (5), Gujarat (7), Maharashtra (3), Odisha (6) and Dadra & Nagar Haveli (1).
2. Elimination (Less than 1 case per 10,000 pop.) in all the districts is the objective in 12th plan period. Number of districts yet to achieve elimination are 118, as on March 31st 2016.

It has been observed that the Grade II disability is on increase for last 10 years which indicate delayed reporting and a large number of cases are still undetected in the community as leprosy is a chronic disease with a long incubation period (average 5-7 years).

It has been observed that Annual New Case Detection Rate (ANCDR) and Prevalence Rate (PR) which is static since 2005 – 2006 and the percentage of grade II disability amongst new cases detected which has increased from 3.10% (2010-2011) to 4.61% (2014-2015). High disability rate indicates delayed



reporting and a large number of cases are still undetected in the community. In view of the above the objective wise activities undertaken are as under.

Objective 1: Elimination of leprosy i.e. prevalence of less than 1 case per 10,000 population in all districts of the country.

A three pronged strategy for early detection of leprosy case in the community has been introduced:

- i. Leprosy Case Detection Campaign for high endemic districts
- ii. Focussed Leprosy Campaign for hot spots
- iii. Specific plan for Case Detection in Hard to reach areas

LEPROSY CASE DETECTION CAMPAIGN

In order to supplement the efforts of the State and eliminate leprosy from high endemic areas, Leprosy Case Detection Campaigns (LCDC), in line with pulse polio campaign and a unique initiative of its kind under NLEP, is initiated in high endemic districts of the country.

The important activities implemented under LCDC were as under:

- Scheduled meetings of various committees

formed at each level i.e., National, State, District, Block to plan and implement the LCDC.

- Focused training of all health functionaries from District to Village level.
- House to house visits by team encompassing one Accredited Social Health Activist (ASHA) and male volunteer i.e. Field Level Worker (FLW), as per micro-plans prepared for local areas.
- Intensive IEC activities, through miking & display of banners/posters during and before the LCDC.
- Supervision of house to house search activities through identified field supervisors.
- Scheduled meetings with community leaders/representatives to resolve any issue came across during the campaign.
- Systematic collection and compilation of reports from Field teams and supervisors through formats designed for the purpose.
- Prompt analyses and feedback on data received from teams, supervisors, monitors, medical officers which will help to plan corrective actions.

Further, in order to monitor the LCDC the central monitors were nominated by this Division for each

State. The field visits were conducted regularly to review the progress and implementation of LCDC. SMS system of case reporting by ASHAs and FLWs was implemented. Inter alia, post LCDC independent evaluation was also carried out through ILEP partners to assess the success of the activity.

The first LCDC was launched in 50 districts of 7 States namely Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha and Uttar Pradesh during last year (2015-16), wherein population of approximately 75 million was covered. Further, after completion of the first LCDC successfully this year, it was conducted in identified 163 districts, showing increase in Prevalence Rate during any of last three years. These districts spread in 20 States and UTs namely Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Nagaland, Odisha, Tamil nadu, Uttar Pradesh, Uttarakhand, West Bengal, Chandigarh, Dadra & Nagar Haveli, Delhi and Lakshadweep and encompassed a total population of approximately 400 million.

32,666 new leprosy cases were detected in Leprosy Case Detection Campaign as per the latest available data.

Collateral benefits of the campaign are:

- i. Extensive Interpersonal communication during the campaign has led to increased awareness about the disease among decision makers and community.
- ii. Training of large work force during short duration of time.
- iii. Increase in availability of resources to the programme.

Objective 2: Strengthen Disability Prevention & Medical Rehabilitation of persons affected by leprosy.

- More emphasis is being given on correction of disability in leprosy affected persons through reconstructive surgery (RCS). To strengthen RCS services, Govt. of India has recognized 115 institutions for conducting RCS based on the

recommendations of the State Government. Out of these, 61 are Govt. institutions and 54 are NGO institutions.

- 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/- i.e. total Rs.10000/- is paid per RCS conducted in Camps.
- During the year 2015-16 a total of 3107 RCS (Govt. 934 and NGO 2173) were conducted. Till date 1079 RCS have been done till October 2016.
- For prevention of disability among persons with insensitive hands and feet, they are given dressing material, supportive medicines and micro-cellular rubber (MCR) footwear. The patients are also empowered with self-care procedure for taking care of themselves. During 2015-16, 52227 MCR foot wear were provided to Leprosy Affected Persons..

Objective 3: Reduction in the level of stigma associated with leprosy.

Information, Education and Communication: Intensive IEC activities are conducted at Centre and State level 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. Extensive IEC was also a collateral benefit of Leprosy Case Detection Campaign.

Initiatives in 2016-17:

- i. Chemoprophylaxis with single dose Rifampicin for contacts of new leprosy cases during leprosy case detection campaign.
- ii. Online reporting system for leprosy.

iii. Sparsh Leprosy Campaign for spreading awareness about the disease and stigma reduction is being conducted all over the country on Anti Leprosy Day on 30th January 2017 wherein nationwide Gram Sabhas will be organised in cooperation and coordination with allied sector of health department/ ministries i.e., Panchayati Raj Institutions, Rural Development, Urban Development, Women and Child Development and Social Justice and Empowerment etc.

5.4 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. 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.

Estimated TB Burden in India

India is highest TB burden country in the world. Out of the estimated global annual incidence of 10.4 million TB cases; 1.4-4.6 million were estimated to have occurred in India, with a best case estimate of 2.8 million cases. The estimated incidence of Tuberculosis is 217 cases per 100,000 populations and the mortality rate is 36 per 100,000 populations as per the Global TB Report 2016. Approximately 4% of TB patients are estimated to be co-infected with HIV. Drug resistant-TB is estimated to be 2.5% in New cases and 16% in previously treated TB cases.

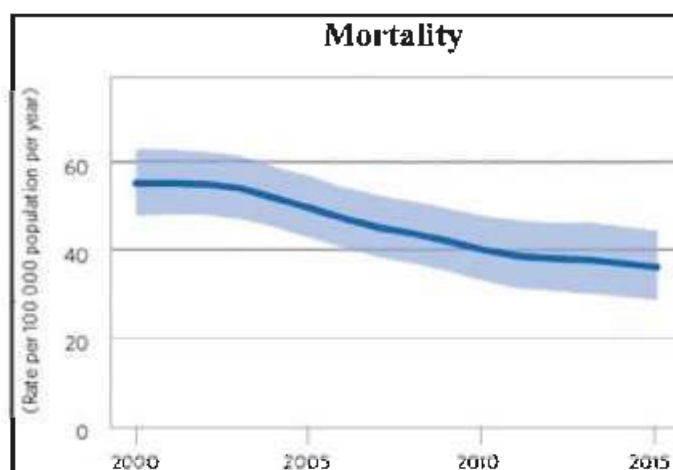
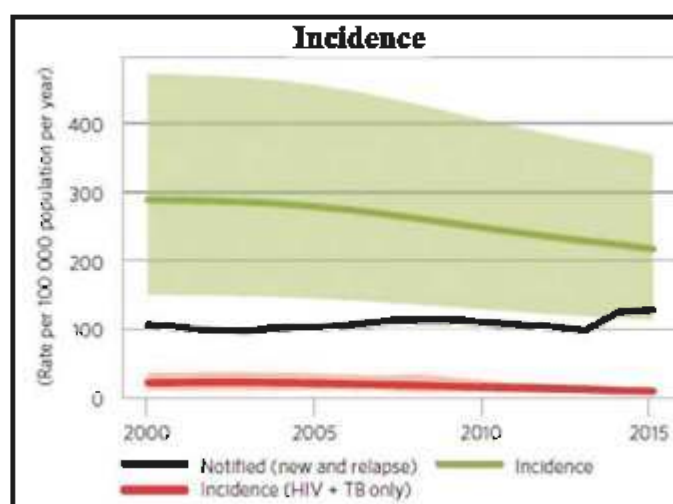
Goal of the Programme

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 TB 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 NHM block level units within general health system for effective supervision and monitoring.



Achievements of the programme

- Progress towards Millennium Development Goal achieved for Incidence and Prevalence
 - o The Incidence of Tuberculosis has come down from 300/lakh population to

217/lakh (58%) population in 2015

- o The Mortality from Tuberculosis has reduced from 76 to 32 per lakh pop (28%) in 2015
- Since inception RNTCP has treated more than 19 million TB patients under DOTS and 14.2 lakh TB cases in the year 2015.
- The programme screened more than 9 million TB suspects in the year 2015.
- During the last five years 1.3 million additional deaths have been averted.
- Treatment success rates have tripled from 25% in pre-RNTCP era to 87% presently (2015) and TB death rates have been reduced from 29% to 4% during the same period.
- The notification of all cases of Tuberculosis has been made mandatory.
- Commercial serology tests for TB diagnosis have been banned.
- More than 13,000 Designated Microscopy Centres (DMCs) for quality assured diagnosis established. In addition 66 labs for drug susceptibility testing for first line and 26 for second line have been established. A total of 628 CBNAAT machines are being used within the programme for rapid diagnosis of Rifampicin resistant Tuberculosis.
- Nationwide coverage of programmatic management of drug resistant TB services from March 2013. In 2015, the programme screened 341395 presumptive DR cases and diagnosed 29057 cases, of which 27104 were initiated on treatment.
- NACP (National AIDS Control Programme) & RNTCP have developed "National framework of Joint TB/HIV Collaborative activities" in 2007 and revised it in 2013. The framework articulates the policy of TB/HIV collaborative activities in the country. HIV co-infected TB services under RNTCP is now available across the country. In

2015, 79% of the total TB patients (1124313 TB patients) were tested for HIV; (3% of those tested) were diagnosed as HIV positive and were offered access to HIV care. 93% of these patients were put on Cotrimoxazole Prophylactic therapy (CPT) while 92% of them received Anti-Retroviral Therapy (ART).

- 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.
- 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 NIKSHAY, case based web based TB case management system is being used by the programme for data management and its various modules are gradually being scaled up.
- The ACSM activities are in-built into the programme and are implemented intensively from the National level to the most peripheral level till the community, essentially for generating demand for RNTCP services, motivating providers for standardized TB care, changing the attitude and practices and creating awareness about the disease.

New Initiatives in 2016:

- Additional 500 CBNAAT machines installed
- Introduction of Bedaquiline for treatment of MDR-TB in India as Conditional Access Program in 6 sites
- Roll out of Daily Regimen in 104 districts
- UATBC (Universal Access to TB Care Projects) Mumbai, Patna and Mehsana

- Revised technical and operational guidelines 2016, in line with End TB Strategy
- TB-HIV Collaboration: Three I Project at high burden ART centres. Innovative intensified TB Case finding and appropriate treatment at high burden ART centers in India
- Information Communication Technology enabled TB control programme (e-Nikshay)
- Nationwide Anti-TB drug resistance survey completed, results awaited by end 2016
- Release of Healthcare workers surveillance- A Handbook
- Release of Guidelines for prevention and management of ADRs
- Mass Media campaign
- Pharmacovigilance & Adverse Drug Reaction (ADR) monitoring- Causality assessment workshop in collaboration with WHO & PVPI

Hon'ble Health & Family Welfare Minister Shri J.P. Nadda launched

- TB India 2015 Report
- New TBC India website: <http://tbcindia.gov.in/>
- 3I Project with 99 DOTS

12th Five Year Plan - Key Activities being undertaken

The following key activities are being undertaken 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 NHM 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.

Financial Allocation to RNTCP

The fund allocation and expenditure from the Ministry of Health and Family Welfare is as under:

(Rs. in crore)

Year	Allocation	Release/Exp.
2012-13	467.00	466.15
2013-14	516.76	516.55
2014-15	640.00	639.94
2015-16	640.00	639.86
2016-17*	640.00	418.64

*Expenditure as on 23.11.2016

5.5 NATIONAL IODINE DEFICIENCY DISORDERS 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 and various types of goiter etc. Results of sample surveys conducted in 390 districts covering all the States/Union Territories have revealed that 333 districts are endemic where the prevalence of Iodine Deficiency Disorders (IDD) is more than 5%. No State /UT is free from IDD.

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.

Significant achievements:

1. Consequent upon liberalization of Iodated salt production, so far 700 salt iodization plants were established and the iodization capacity was 214.62 lakh tones per annum (31st March, 2015).
2. The production and supply of iodized salt from April 2016 to June 2016 was 18.32 lakh tones and 17.36 lakh tones respectively. The production and supply of iodized salt during 2015-16 was 64.76 lakh tones and 62.43 lakh tones respectively.
3. For effective implementation of National Iodine Deficiency Disorders Control Programme, 34 States/UTs have established Iodine Deficiency Disorders Control Cells in their State Health Directorate.
4. In order to monitor the quality of Iodized salt and Urinary Iodine excretion 34 States/UTs have already set up Iodine Deficiency Disorders monitoring laboratories while the remaining States are in the process of establishing the same.
5. Training Programme on Management of NIDDCP to State Programme Officers / Technical Officers was conducted from 2- 4th March, 2016 at NIHF, New Delhi.
6. For estimation of iodine content in salt, a total of 30942 salt samples were collected and analyzed so far by States/UTs, out of which 26822 (87%) salt samples were found confirming to the standard (iodine content > 15 ppm).
7. For estimation of Urinary Iodine Excretion (UIE) for bio-availability of iodine, a total of 8622 urine samples were collected and analyzed so far by States/UTs, out of which 7956 (92%) samples were found confirming to the standard (UIE > 100µg/L).
8. For ensuring the quality of iodized salt at consumption level, a total of 4202534 salt samples were tested by salt testing kit so far by States/UTs, out of which 3605263 (86%) salt samples indicated normal quality i.e salt having iodine >15ppm.
9. A meeting was convened with IEC Experts on the proposed IEC activities of 2016-17 under NIDDCP to have innovative IEC activities to generate awareness about IDD as well as benefits of consumption of Iodized salt among unreached people of the country.

Information Education & Communication (IEC) Activities

1. Activities through Doordarshan: IDD spots containing messages on consequences of Iodine Deficiency Disorders and benefits of consuming iodated salt are being telecast through Doordarshan channels (National Network, DD News, Kissan & DD Sports) daily.
2. Activities through All India Radio: IDD spots containing messages on major consequences of iodine deficiency disorders and benefits of consuming iodated salt in 18 regional languages are being broadcast by the All India Radio through its 190 primary channels and in 6 regional languages through 37 Vividha Bharthi channels. Messages are also broadcast through 25 FM channels (including 4 FM Gold channels) and National and Regional News channels.
3. Activities through DAVP and Railways:
 - Global IDD Prevention day was observed throughout the country on 21st October, 2016. Messages on IDD and importance 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.
 - Mobile SMS on IDD and importance of Iodized salt in Hindi & English were released on the occasion of Global IDD Prevention Day on 21st October, 2016.

- IDD awareness campaign through Bus Panels is being carried out in the country.
 - Messages on Iodine Deficiency Disorders (IDD) and importance of Iodized salt through computerized Railway reservation tickets is being carried out covering 9 different railway zones.
4. 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.