CHAPTER 1

Filariasis Control in India & Its Elimination

1. INTRODUCTION

Filariasis is the common term for a group of diseases caused by parasitic nematodes belonging to superfamily Filarioidea. Adult worms of these parasites live in the lymphatic system, cutaneous tissues or body cavity of the humans and are transmitted through vectors. Filariasis caused by nematodes that live in the human lymph system is called **Lymphatic Filariasis (LF)**

2. CAUSATIVE ORGANISMS

Three nematode parasites causing LF in human are *Wuchereria bancrofti, Brugia malayi* and *Brugia timori*. Of these, only *Wuchereria bancrofti* and *Brugia malayi* are found in India. In mainland India, *Wuchereria bancrofti,* transmitted by the ubiquitous vector, *Culex quinquefasciatus,* has been the predominant infection contributing to 99.4% of the problem in the country. The infection is prevalent in both urban and rural areas. The vector species breeds preferably in dirty and polluted water.

Brugia malayi infection has been reported earlier from some rural areas in seven states viz., Kerala, Orissa, Tamil Nadu, Andhra Pradesh, Madhya Pradesh, Assam and West Bengal. However, its prevalence is now reportedly restricted to rural areas of Kerala and the infection disappeared in some pockets in other states. *Mansonia (Mansonioides) annulifera* is the principal vector while *M. (M). uniformis* is the secondary vector for transmission of *B. malayi* infection. The breeding of these mosquitoes is associated with aquatic plants such as *Pistia stratiotes, Salvinia auriculata, Salvinia molestes, Eichhornia speciosa, E. crassipes,* etc.

Both *W. bancrofti* and *B. malayi* infections in mainland India exhibit nocturnal periodicity of microfilariae. In 1974-75, diurnal sub-periodic *W.bancrofti* infection was detected among aborigines, inhabiting Nicobar Group of Andaman & Nicobar Islands. *Ochlerotatus (Finlaya) niveus* group of mosquitoes were incriminated as the vectors for this infection, formerly known as *Aedes (Finlaya) niveus*.

3. LIFE CYCLE OF THE PARASITE

The adult parasite worms, male and female, live in the lymph vessels and lymph nodes by making nest in the dilated lymphatics. The adult worms survive for about 5-8 years and sometimes for as long as 15 years. After mating, the female worm parturates millions of microfilariae which finally migrate

to blood circulation. The sheathed microfilariae begin to appear in the blood circulation in six months to one year after infection (prepatent period). The microfilariae remain in the arterioles of the lungs during the day and emerge into the peripheral circulation at night (nocturnally periodic). The periodicity of mf coincides with the biting activity of the vector. The sexual cycle of the parasite takes place in the human host, where the adult worms ultimately die. The life cycle of the parasite is cyclo-developmental in the vector where the parasites do not multiply.

Microfilariae, (when picked up by the mosquito during blood meal) undergo development in mosquitoes (intermediate hosts) to form infective larvae which usually takes about 10 to 14 days. The ingested microfilariae first shed their sheaths, penetrate the stomach wall, migrate to the muscles of the thorax and develop there without multiplication. The slender and tiny microfilariae (mean length of mf in *Wb* 290 µ, *Bm* 222 µ and *Bt* 310 µ) transform into immobile and inactive sausage stage (L1) larva, which has a cuticle that forms a conspicuous slender tail with specific identification characters. The larvae grow rapidly in length and breadth after their first moult to become L2 or pre-infective larva, which is recognised by the presence of one or two papillae at its caudal end and by its short tail. This L2 stage moults to become L3 which is infective. It is slender and thread like, measuring about 1500-2000 microns in length. It is highly motile which is a unique phenomenon used for identification (Fig.1).

Fig 1: Different stages of larvae in mosquito

Mf in mosquito vector | L 1 in mosquito vector | L 2 in mosquito vector | L 3 in mosquito vector

When the infective mosquitoes (harbouring L3 larvae) bite, some or all of the infective larvae escape from the proboscis and actively enter the human host through the wound made by the mosquito bite or penetrate the skin on their own and migrate into lymphatic system. In the lymphatic system of the infected persons, the infective larvae develop into adult male and female worms (Fig. 2).

4. *WOLBACHIA* ENDOSYMBIONT

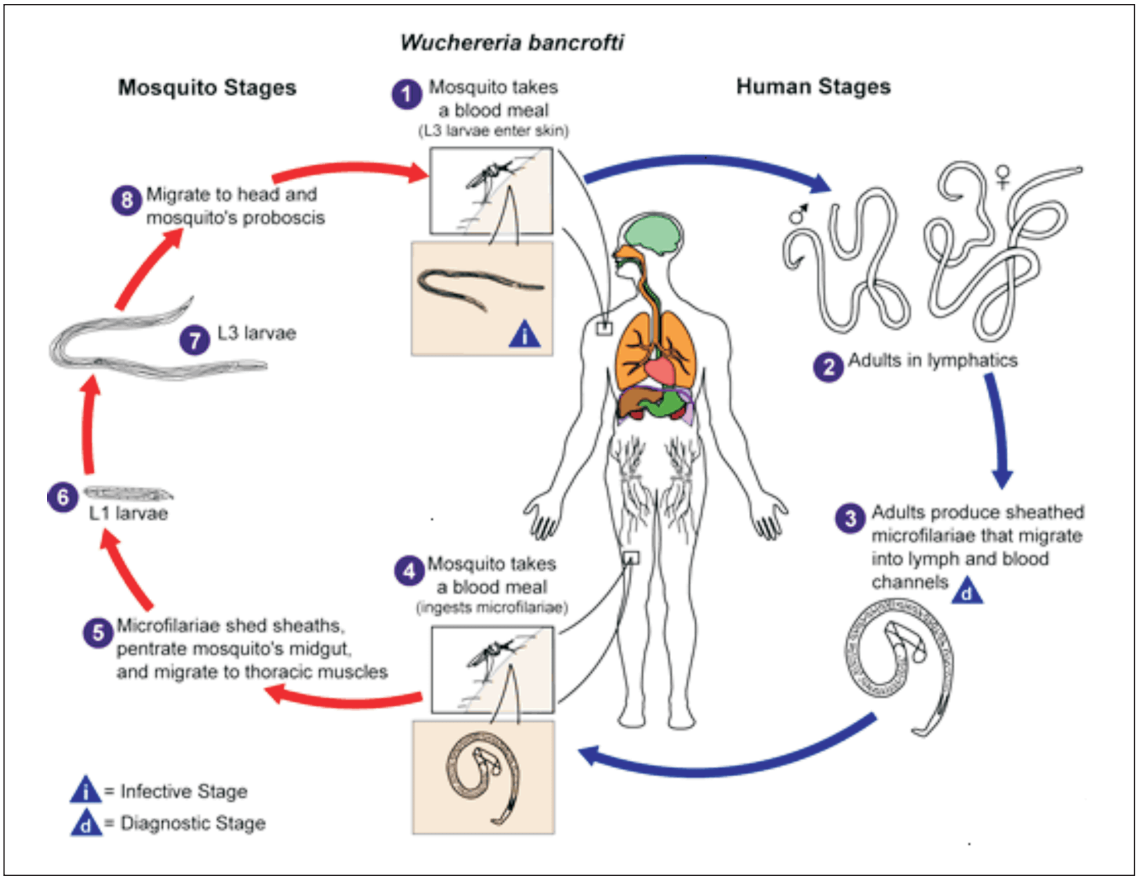
Several recent studies have demonstrated presence of *Wolbachia*, bacterial endosymbionts in the adult filarial worms and microfilariae of both *W. bancrofti* and *B. malayi*. This bacterium is necessary for the development, viability and fertility of the adult parasites. Drug interventions directed against *Wolbachia* cause deleterious effect on the survival of the adult worms.

5. CLINICAL SPECTRUM

Man is the natural host. All ages and genders are susceptible to infection. In endemic areas, the youngest age recorded with filarial infection was infant aged 6 months. The infection increases with age reaching a peak between 20 and 25 years. Disease manifestation appears in a small

proportion of infected individuals, commonly over 10 years of age. The disease spectrum of LF ranges from the initial phase of asymptomatic microfilaraemia to the later stages of acute, chronic and occult clinical manifestations.

Fig 2: Life Cycle of Filarial Parasite



5.1 Asymptomatic Parasite Carrier State

Some of the infected individuals continue to harbour the parasite for many years without any sign and symptoms of disease. Even at this stage subclinical changes like lymph vessel dilation and tortuosity are shown by ultrasonography and lymphoscintigraphy. Only some among these infected asymptomatic individuals progress to clinical disease in course of time.

5.2 Acute Disease

- Adenolymphangitis :
  - Acute dermato-adeno-lymphangitis (**ADLA**)
  - Acute filarial lymphangitis (**AFL**)
- Acute epididymo-orchitis and funiculitis:

Acute dermato-adeno-lymphangitis (ADLA): Attacks of ADLA associated with fever and chills are the common acute manifestations for which the patients seek medical intervention. It occurs both in early and late stages of the disease progression, it is more frequent in higher grades of lymphoedema. The affected area, usually in the extremities is extremely painful, warm, red, swollen and tender, the draining lymph nodes in the groin or axilla become swollen and tender. There may be lymphangitis, lymphadenitis, cellulitis or abscess. Depending upon the precipitating factors, the frequency and duration of each episode vary. Entry of bacteria and pathogens through the lesions of the affected parts is responsible for the acute episodes.

Acute filarial lymphangitis (AFL): At the location where adult worms die, small tender nodes are formed either in the scrotum or along the lymphatics of the limbs. Lymph nodes may become tender. Inflamed large lymphatics may stand out as long tender cords underneath the skin, usually along the sides of chest or medial aspect of arm, with restriction of movement of the affected limb. But these episodes are not associated with fever, toxaemia or evidence of secondary bacterial infection. Rarely abscess formation may be seen at the site of dead adult worms. This acute manifestation is directly caused by adult worms and is usually rare. This may occur due to death of adult worns either spontaneously or by antifilarial drugs.

Acute epididymo-orchitis and funiculitis: Inflammation of structures in the scrotal sac may result in acute epididymo-orchitis or funiculitis in bancroftian filariasis. This is characterised by severe pain, tenderness and swelling of scrotum usually with fever and rigor. The testes, epididymis or the spermatic cord may become swollen and extremely tender. This manifestation is also precipitated by secondary infections.

5.3 Chronic Disease

Lymphoedema, hydrocele, elephantiasis and chyluria are the main clinical pathological consequences of chronic bancroftian filariasis.

Involvement of Limbs

Lymphoedema of the extremities is a common chronic manifestation of LF, which on progression leads on to elephantiasis. Lymphoedema of the limbs is graded as follows:

Grade I lymphoedema: Mostly pitting oedema; spontaneously reversible on elevation **(Fig. 3).**

Grade II lymphoedema: Mostly non-pitting oedema; not spontaneously reversible on elevation (Fig-4).

G*rade III lymphoedema (elephantiasis):* Gross increase in volume in a grade II lymphoedema with dermatosclerosis and papillomatous lesions (Fig. 5 & 6)

In the advanced stages of lymphoedema, the skin is thickened and thrown into folds, often with hypertrichosis, black pigmentation, nodules, warty growth, and Intertrigo in the webs of toes (Fig. 7) or chronic non-healing ulcers.

Genito-urinary Involvement

- Hydrocele

- Chylocele
- Lymphoedema of the scrotum and penis
- Lymph scrotum

Fig. 3: Grade I Lymphoedema

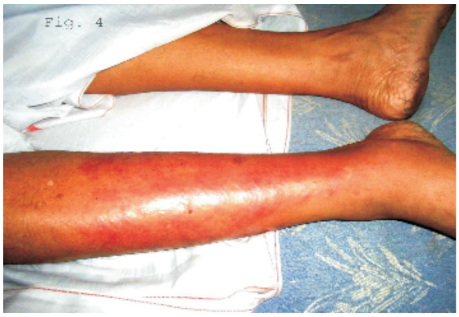


Fig. 4: Grade II Lymphoedema

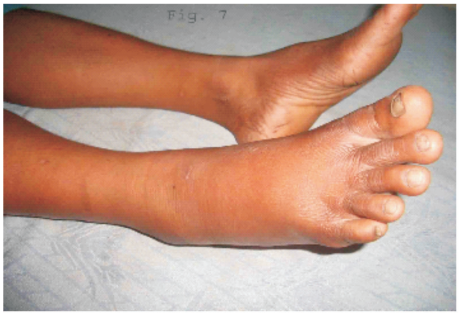


Fig. 5: Grade III Lymphoedema without nodules and warts

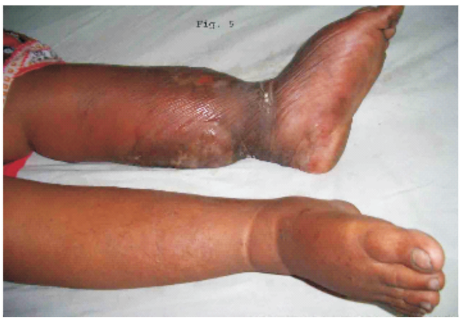
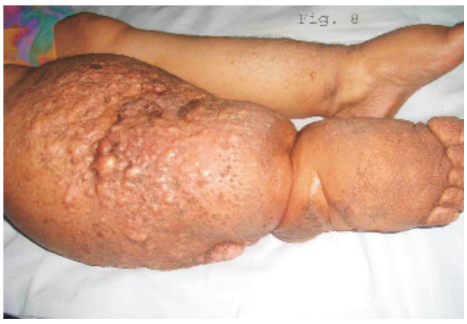


Fig. 6: Grade III Lymphoedema with nodules and warts



Hydrocele is a common chronic manifestation of bancroftian filariasis in males (Fig. 8). This is characterized by accumulation of fluid in the tunica vaginalis, the sac covering the testes. The swelling gradually increases over a period of time and in long standing cases, the size of the scrotum may be enormous. Lymphoedema of the scrotum and penis may occur in bancroftian filariasis. In some subjects, the skin of the scrotum may be covered with vesicles distended with lymph known as 'lymph scrotum'. These patients are prone for ADLA attacks involving the skin of genitalia.

Chronic epididymitis, funiculitis (inflammatory) swelling of the spermatic cord), and lymphoedematous thickening of the scrotal skin are also genital manifestations of chronic filariasis. These manifestations are uncommon with brugian filariasis.

Other Manifestations

The other manifestations include chyluria, hematuria, Tropical Pulmonary Eosinophilia (TPE) and Filarial granulomata.

Chyluria: It is defined as the excretion of chyle in the urinary tract. The basic pathophysiology is related to blockage of the retroperitoneal lymph nodes below the cisterna chyli with consequent

Fig. 7: Entry lesion (candidiasis) in the web of toes in filarial leg

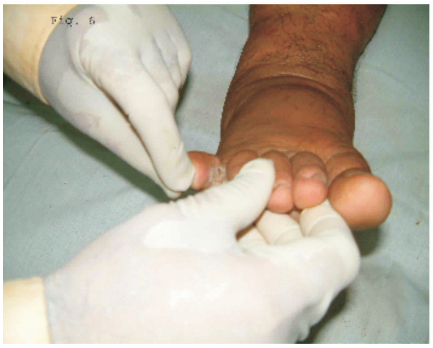
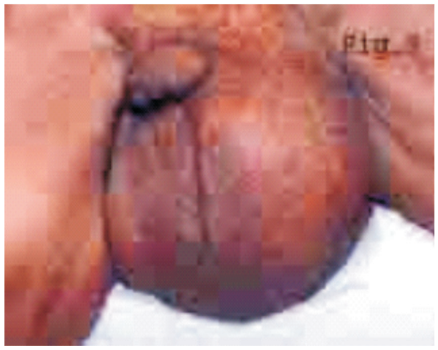


Fig. 8: Chronic genital manifestation on the left side of the scrotum



reflux and flow of the intestinal lymph directly into the renal lymphatics, which may rupture and permit flow of chyle into the urinary tract. The resultant "milky urine" contains considerable quantities of lymph originating from the gastro-intestinal tract. The condition is usually painless but large amounts of dietary lipids, proteins, and possibly fat soluble vitamins are excreted leading to weight loss.

Occult filariasis and Tropical Pulmonary Eosinophilia : It is the condition in which the classical clinical manifestations are not present and where microfilariae are not found in the blood but may be found in the tissues. Tropical Pulmonary Eosinophilia (TPE) is the classical example of occult filariasis. TPE associated with high eosinophil counts in the peripheral blood is an occult manifestation of both *W. bancrofti* and *B. malayi* filariasis. This syndrome is characterized by severe cough and wheezing (specially at night), diffuse mottled pulmonary interstitial infiltrate, peripheral blood eosinophilia > 2500 cells /µl, extreme elevation of immunoglobin (IgE), extreme elevation of anti-filarial antibodies and dramatic clinical improvement in response to specific anti-filarial chemotherapy with diethylcarbamazine (DEC).

6. CURRENT STATUS AND DISTRIBUTION

Global burden of Lymphatic Filariasis

Lymphatic filariasis is the world's second leading cause of long-term disability. Although filariasis does not kill, it causes debility and imposes severe social and economic burden to the affected individuals, their families and the endemic communities. The current estimate reveals that 120 million people in 83 countries of the world are infected with lymphatic filarial parasites, and it is estimated that more than 1.1 billion (20% of the world's population) are at risk of acquiring infection. Over 40 million people are severely disfigured and disabled by filariasis and 76 million are apparently normal but have hidden internal damage to lymphatic and renal systems. According to the World Health Organization, India, Indonesia, Nigeria and Bangladesh alone contribute about 70% of the infection worldwide.

It has been estimated that approximately 5 million Disability Adjusted Life Years (DALYs) lost annually, ranking third among the TDR diseases in terms of DALYs after malaria and TB. In addition, the social and psychological impact is enormous - often destroying marriages and family

relationships. Although filariasis does not kill, it causes debility and imposes severe social and economic burden to the affected individuals, their families and the endemic communities. Lymphatic filariasis is a major impediment to socioeconomic development and cause and effect of poverty.

Current Status and Distribution of LF in India

The disease was recorded in India as early as 6th century B.C. by Susruta, in his book 'Susruta Samhita' and in 7th century A.D., Madhavakara described sign and symptoms of the disease in his treatise 'Madhava Nidhana', which hold good even today. In 1709, Clarke called elephantoid legs in Cochin as 'Malabar legs'. The discovery of microfilariae (mf) in the peripheral blood was made first by Lewis in 1872 in Kolkata City.

Indigenous lymphatic filariasis cases are reported from 20 States/UTs namely Andhra Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, Uttar Pradesh, West Bengal, Puducherry, Andaman & Nicobar Islands, Daman & Diu, Lakshadweep and Dadra & Nagar Haveli. From these States/UTs, a total of 250 districts have been identified to be endemic for filariasis with a population of about 600 million at risk.

The North-Western States/UTs namely Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Chandigarh, Rajasthan, Delhi, Uttaranchal and North-Eastern States namely Sikkim, Arunachal Pradesh, Nagaland, Meghalaya, Mizoram, Manipur and Tripura are known to be free from indigenously acquired filarial infection.

7. CONTROL OF LF IN INDIA

National Filaria Control Programme, launched in 1955 has operational, training and research components. The strategies include (a) vector control (b) detection and treatment of filarial cases and (c) delimitation of endemic areas. This is being carried out through control units, night clinics and survey teams. This programme continues to be in place, in addition to the programme to eliminate LF in India.

8. LF ELIMINATION STRATEGY

What is meant by Elimination of Lymphatic Filariasis?

Elimination of LF is meant that LF ceases to be a public health problem, when the number of microfilaria carriers is less than one per cent and the children born after initiation of ELF are free from circulating antigenaemia. Absence of antigenaemia among children is considered as evidence for absence of transmission and new infection.

In 1997, WHO and its Member States made a commitment to eliminate Lymphatic Filariasis (LF) as public health problem by 2020 through World Health Assembly Resolution WHA 50.29. The National Health Policy (2002) has set the goal of Elimination of Lymphatic Filariasis in India by 2015.

The Govt of India constituted the National Task Force (NTF) with Director General of Health Services, MOH&FW as Chairperson, DG ICMR, Director NCDC, senior officers of Health services from states as members and Director of NVBDCP as Member Secretary. NTF reviews and recommends the strategy for ELF in India.

The twin pillars of LF elimination strategy include:

1. Transmission control – to prevent the occurrence of new infection and disease by administration of annual single dose of anti-filarial drug i.e. DEC and/or co-administration of DEC+Albendazole.[1]
2. Disability Prevention and Management – for those individuals who already have the disease
    - Home based management – limb hygiene for lymphoedema
    - Hospital based management – surgical correction for hydrocele

Major components/functions/tasks towards implementation strategy include:

- Disease burden estimation
- Mapping and stratification
- Advocacy
- Social mobilization
- Implementation of MDA
- Implementation of disability prevention and management
- Monitoring and Evaluation
- Background surveillance to prevent resurgence
- Certification

Key advances that form the basis of the strategies for the elimination of lymphatic filariasis

- Man is the main reservoir of infection in India
- Better understanding of the disease dynamics:
    - Asymptomatic carriers
    - Acute attacks are caused by secondary bacterial infections
    - Entry lesions such as intertrigo are responsible for the occurrence of acute attacks
    - Early damage to the lymphatics
    - Dilation and dysfunction of lymphatics rather than obstruction
- Parasite better understanding
    - Parasite exhibits genetic diversity
    - Long patent period
- Drugs
    - DEC and albendazole
    - Drugs are safe and are already in clinical practice
    - Single annual dose of anti-filarial drugs can suppress microfilaria levels for periods as long as one year
- Delivery system – community based
- Diagnostics – antigenaemia and antibody tests
- Over 85% coverage of the population for at least 5 years could effectively interrupt transmission
- MDA is operationally feasible to carry out with the available health care infrastructure with the support of community volunteers
- Side effects due to the drugs are primarily in response to the killing of the parasites and can easily be managed
- The key to success is community participation. Community mobilization is a key component of the elimination strategy

[1] The MDA programme will continue with DEC. Albendazole will be added when it is made available from WHO which has agreed to supply the drug at free of cost for the LF elimination programme in India. DEC+Albendazole administration has been included in MDA 2008 onwards in a few endimic states which will be extended to all 20 states/UTs in the coming years.

CHAPTER 2

Mapping and Disease Burden Estimation

1. MAPPING

The objective of mapping areas is to identify the potential transmission areas where intervention is to be introduced.

This could be done by:

- Historical records
- Rapid method by key informant interview
- Physical examination of the individuals by the health workers
- Microfilaraemia survey
- Detection of infective stage larvae in the vector

Currently the ELF is being implemented in 250 known endemic districts. These have been chosen based on historical data on endemicity or based on reports from the states. It is important to verify the current endemicity status of other districts especially those adjoining the MDA districts. In MDA districts also, where the ELF is ongoing, updating of mapping will be useful for monitoring and evaluation. Case detection is required in all the intervention districts for providing morbidity management services.

1.1 Historical Records

Data already available on the prevalence of microfilaraemia and/or disease can be used to identify the endemic areas. Areas qualify for the intervention include evidence for indigenous transmission or mf prevalence above 1%. Based on the data on prevalence of infection, the area can be classified into (a) clearly endemic (red) (b) clearly free from infection (green) and (c) areas with insufficient evidence (gray). Source of information, reliability of data, period or time survey, survey methods, etc. are to be considered while taking decision on the inclusion of areas for introducing the intervention.

1.2 Key Informant Questionnaire Method

A simple questionnaire circulated to key informants such as school teachers, health workers, Panchayat members, local medical practitioners, etc. will enable to identify high endemic areas. Negative reporting does not necessarily mean that such areas are free from transmission of filariasis. The sample questionnaire is given at *Annex. 2.2.*

1.3 Direct Physical Examination by Health Worker

In areas where the questionnaire cannot be administered or the informants are not knowledgeable about disease prevalence, physical examination can be used as a rapid assessment tool for lymphatic filariasis. In this approach, mobile teams of health workers visit villages and examine adults for lymphoedema of the leg or hydrocele in males. In some communities, the prevalence of hydrocele has offered good indirect evidence of transmission of LF in the area.

1.4 Detection of Microfilariae in the Blood

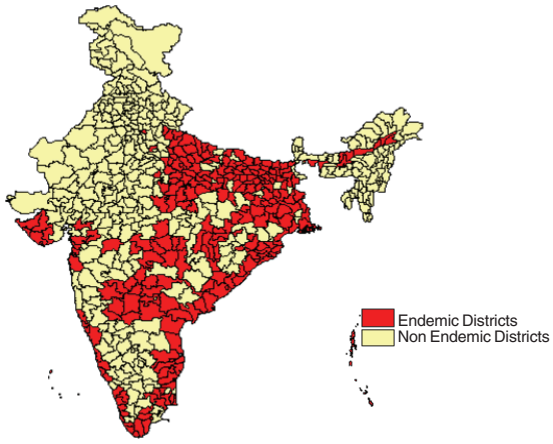
For epidemiological screening, 20 cmm of finger-prick blood can be dried flat on a slide, stained and examined under a microscope in accordance with the standard procedure.

Advantages of using microfilaraemia detection in finger-prick blood for initial assessment include the general availability of materials and trained staff in many filariasis endemic districts and the fact that positive specimens are "parasitologically confirmed". Disadvantages include the need to collect blood at night (between 8.30 *pm* and 12 midnight) and the labour-intensiveness of preparing and examining slides.

Microscopic slides and stains will be required for baseline parasitological surveys in sentinel surveillance sites before the first round and for subsequent years. The selection methodology of microfilaria survey for collection of baseline data and data to assess the impact is given in Chapter- 3.

1.5 Detection of Infective Stage Larvae (L3) in Mosquitoes

Xenomonitoring is defined as the monitoring of parasite in the vectors. By this method, vector mosquitoes are collected and examined for the presence of parasite (dissection) or parasite material (Polymerase Chain Reaction) using molecular technique. Presence of infective stage larva of LF is considered as an indication of current risk of transmission. Presence of larva in the vector indicates the presence of microfilaria carriers in the community. This is a passive method without samples from human. These are described for better understanding to the programme officers and assistance of research institutes can be sought for such work.



2. NON-ENDEMIC DISTRICTS

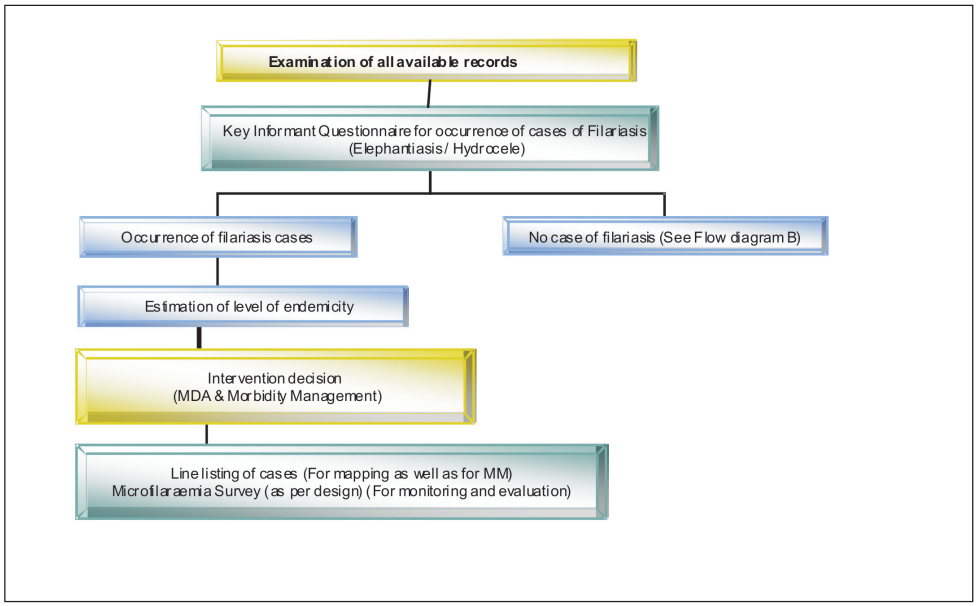
The districts, which are currently shown as non-endemic or where there are no records, need to be surveyed involving steps shown in flow diagrams A &B:

3. MAPPING BASED ON AVAILABLE RECORDS FOR FILARIASIS

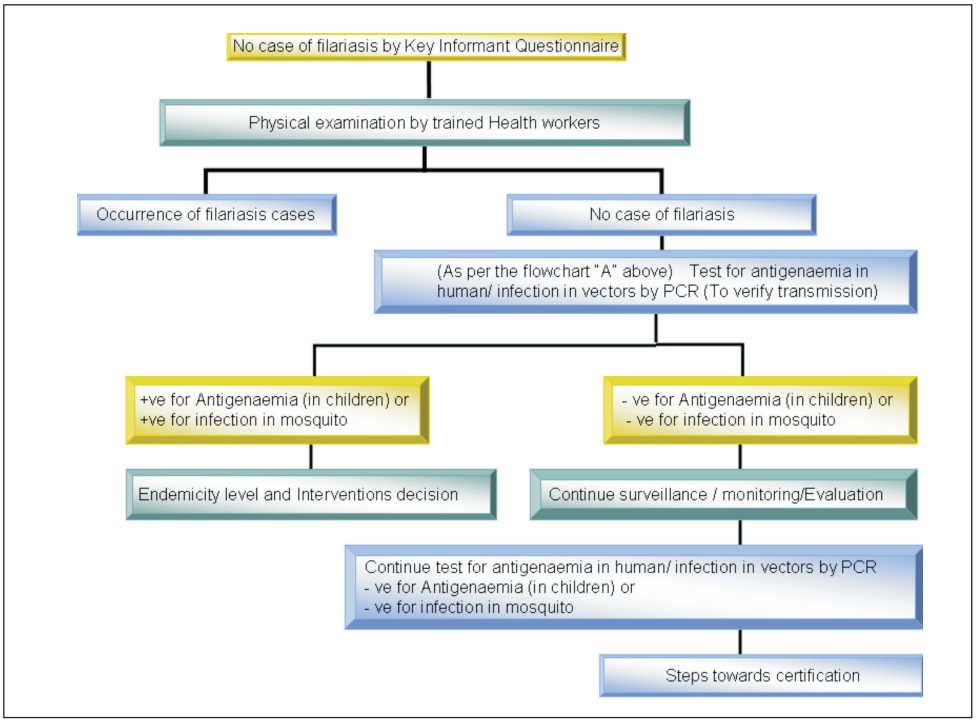
Endemic districts:250 (in 20 States/UTs)
Population at risk: 600 milion

Based on the data available till the year 2007, there are 250 filaria endemic districts, which are shown in endemicity map. Mass Drug Administration is being implemented in these districts. However, the other districts are being resurveyed for filaria endemicity. The endemicity map shown in earlier years is depicted at the end of this chapter.

Flow Diagram A



Flow Diagram B



4. DISEASE BURDEN ESTIMATION

Disease burden estimation is a prerequisite to:

- identify areas that require intervention
- prepare advocacy package to implement the intervention
- plan, deliver and monitor disability alleviation and prevention strategies
- monitor and evaluate intervention programmes.

4.1 Methods

The methods to assess disease burden aim at enumeration how many people are infected and how many with disease manifestations. This can be carried out to examine historical data and/or to carry out community surveys. Line listing is the principal method to enlist all the diseased individuals in the given community.

4.2 Line listing of filarial cases and analysis of data

Prevalence of filarial disease cases in the community should be enquired from community heads, key informers and opinion leaders. Since lymphoedema is recognizable, the information can easily be obtained. The reported cases are to be confirmed by visiting their houses. It is to be enquired whether any other person in the family or in the neighbourhood also suffers from the disease. The details are to be compiled at village/subcentre/PHC/District/State levels including similar compilation in urban areas. This will be useful to identify high-risk areas and more accurate estimates of disease burden could be made. Such information would be useful in chalking out strategies for elimination of lymphatic filariasis by prioritising areas within each district for more intensive IEC activities, morbidity management and monitoring the effectiveness of health care delivery services on disease burden. The line listing of cases should include the following particulars:

A patient card will be provided to the health workers to make record of persons having manifestations of filaria such as lymphoedema, hydrocele, etc. The information should be noted.

Elimination of Lymphatic Filariasis
Patient Card

State:_____District:_____PHC_____

Subcentre:_____Village:_____

Name of Head of Family	
Name of the patient	
Address	
Age	
Sex	
Duration of lymphoedema/ hydrocele	
Other family members affected	

This card should be handed over to the patient so that he can contact CHC/PHC/Subcentre for morbidity management including hydrocelectomy.

On the back of the card, write some key messages on morbidity management and prevention of filariasis.

Line listing of cases is to be recorded by the health worker in Form-1 for submission to MO-PHC **(Annex - 2.1)**. The information will be recorded by the health workers in the village-wise compilation register under the relevant sub-headings.

The nodal officer of district should collect the information for rural and urban areas in the district. The compilation should be done using the Forms 2, 3 and 4 which should be submitted to State HQ, with a copy to the Directorate of NVBDCP along with diagram and map showing the PHCs and Subcentres where suspected cases were reported.

Annexure 2.1

Form- I

LINE LISTING OF FILARIA PATIENTS

State:_____**District:**_____**PHC:**_____

Sub-centre:_____ **Name of the healthworker:**_____

Sl. No.	Name of Patient	Sex	Age	Name of Head of family & address	Village/ Pancha-yat	Population	Disease affected part					Time of starting of disfig-urement	Period of stay in district	Date of survey
							Leg	Hand	Scrotum	Breast	Others			

Note: Form 1 is meant for collecting basic information by the peripheral health worker / health volunteer while Forms 2-4 are for data analysis which is to be filled by the supervisory staff with the help of basic health workers

Form-2 (To be compiled at PHC)

Age-wise and sex-wise classification of cases in subcentre.....

Age	Below 2 years		2-4		5-8		9-14		15-25		26-40		41-60		60>		Total No.		
Sex	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	T
No.of Pati-ents																			

M: Male, F: Female, T: Total

Form-3 (To be compiled at PHC)						
Types of Disfigurement due to Lymphatic Filariasis in Subcentre…….						
Disfigurement area	**Leg**	**Hand**	**Scrotum**	**Breast**	**Others**	**Total No.**
No. of cases →						

Form-4 **Percentage of filarial patients in subcentre……**			
Name of Village/Panchayat	**Population**	**No. of Filaria patients**	**Percentage of filarial patients**

The MO PHC will compile subcentres-wise report on Format No. 2, 3 & 4 and analyse the data further by making a line map and diagram and forward to the district.

Example: Line list of patients:

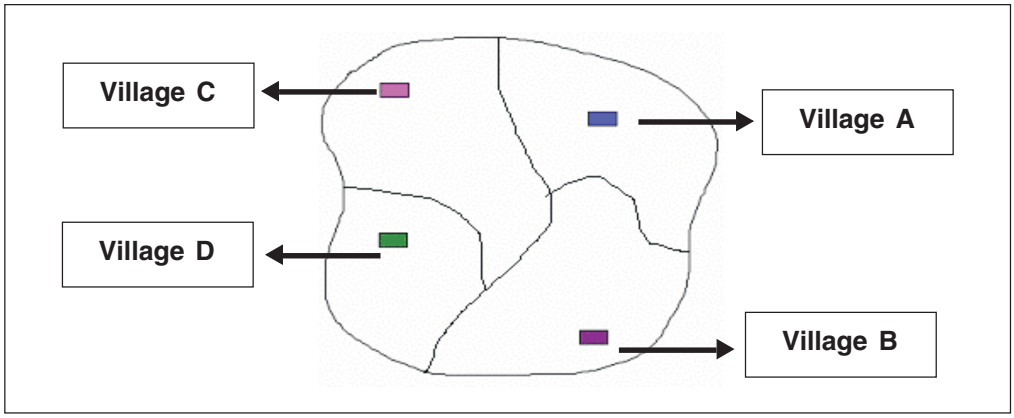
S. No.	Name of the Patient	Age of Patient (years)	Duration of Disease (years)	Gender	Village
1.	Sunita	30	4	F	D
2.	Manoj	82	25	M	A
3.	Ram	60	3	M	C
4.	Gopal	36	4	M	B
5.	Shyam	30	2	M	A
6.	Hussain	30	5	M	B
7.	Meena	38	2	F	B
8.	Raghunath	55	3	M	C
9.	Pritam Singh	50	20	M	D
10.	Ganga	40	8	M	D
11.	Sangeeta	30	5	F	A
12.	Murti Singh	45	7	M	B

Based on the above information collected at subcentre level, the PHC-wise and District-wise consolidated forms, map and graph will be prepared at the respective districts as indicated below and will be sent to State Headquarters and the Dte. of NVBDCP, Delhi. The Form-1 for line listing of patients by the health workers/health volunteers is given in ***Annexure 2.2.*** The photo

identification card for LF patient with questionnaire for line listing is given in *Annexure 2.3*

MAP INDICATING VILLAGES OF FILARIA AFFECTED PATIENTS IN SUBCENTRE

A. Spot map of cases by residence



B. Age-wise and gender-wise distribution of LF patients in subcentre_____ Year_____

Name the Village	Below 2 years				2-4 years			5-8 years			9-14 years			15-25 years			26-40 years			41-60 years			60+years			Total	
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T

No. of LF patients

Annex 2.2

INTERVIEW OF KEY INFORMANTS
Rapid Assessment of Community Burden of Disease

1. State: .....
2. District: .....
3. Name of village/urban area: .....
4. Name of the informant: .....
5. Age: .....Years
6. Sex: .....
7. Occupation: .....
8. How many years have you lived in this village/ urban area? ..... Years
9. Have you seen local inhabitants of the area with elephantiasis of the leg?

   Yes ☐ No ☐

10. How many people in the village have elephantiasis?.....

    10.1. Do you consider elephantiasis to be a health problem in this village/ urban area?
    .....

11. Do you know of people in this village/urban area with hydrocele?

    Yes ☐ No ☐

    11.1. How many people in the village/urban area have hydrocele:.....

    11.2. Do you consider hydrocele to be a health problem in this village/urban area?

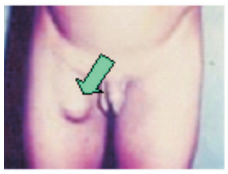
    .....

12. Do you know of people suffering from acute attacks of filariasis?
13. Do you know about MDA in your area?
14. Have you consumed anti-filarial drugs?
15. Have you encouraged your neighbours, relatives and friends to consume the anti-filarial drugs?

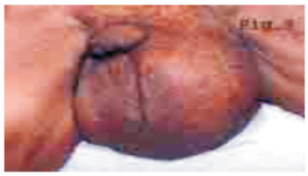
Annex 2.3

FLASH CARD FOR LINE LISTING

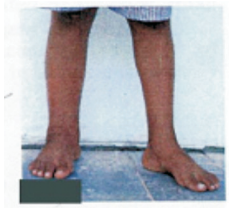
Card for Self-Reporting of Signs suggestive of Filariasis



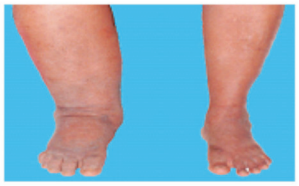
Adenitis



Hydrocele



Lymphoedema-II



Lymphoedema-III

If you suffer from any one of the symptoms – Report to the Health Worker.

Swelling of the leg / arm.

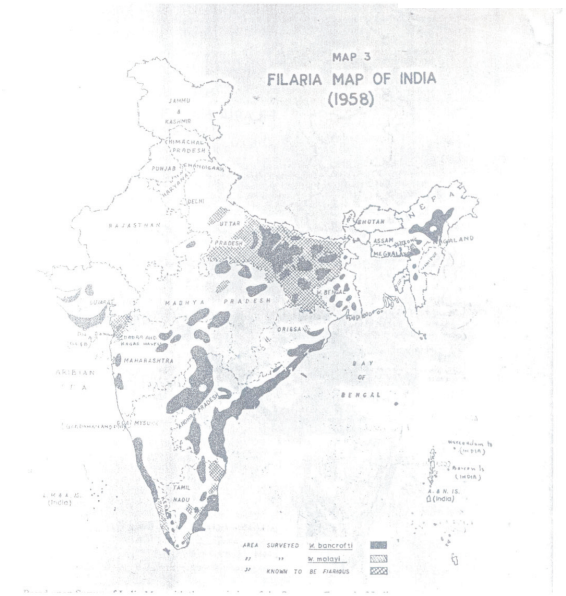
Swelling of the scrotum.

Painful swelling in Groin / Axilla with frequent attacks of fever and Chills.

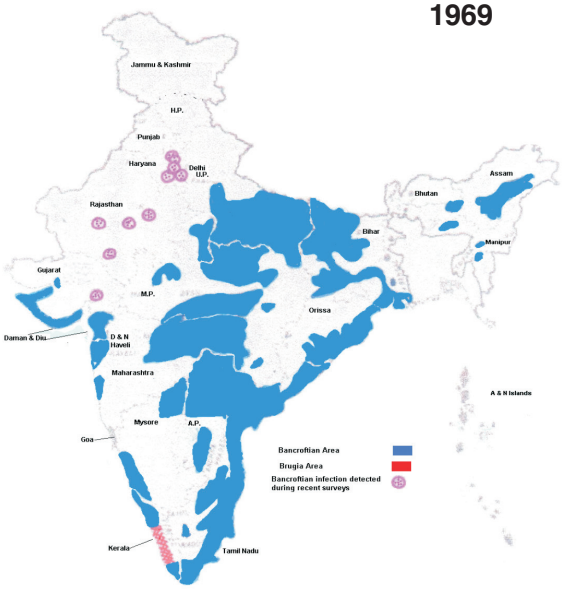
DIRECTORATE OF NATIONAL VECTOR BORNE DISEASE CONTROL PROGRAMME
22, SHAMNATH MARG
DELHI – 110 054

This card to be used by the Health Workers/volunteers visiting villages/urban areas

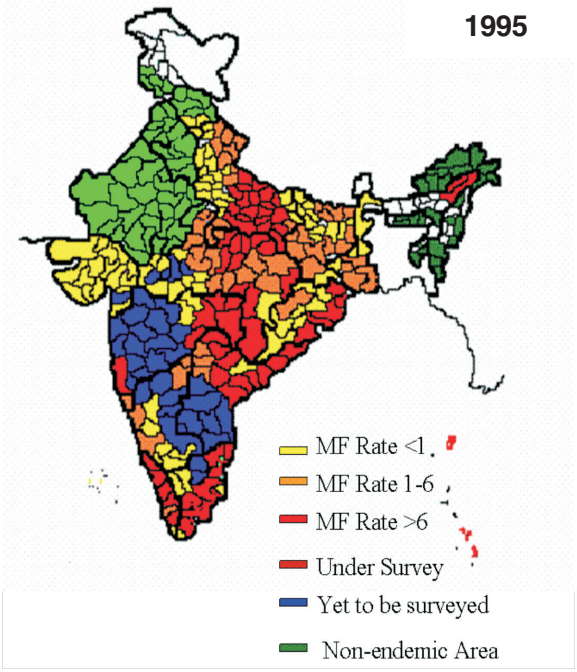
1958



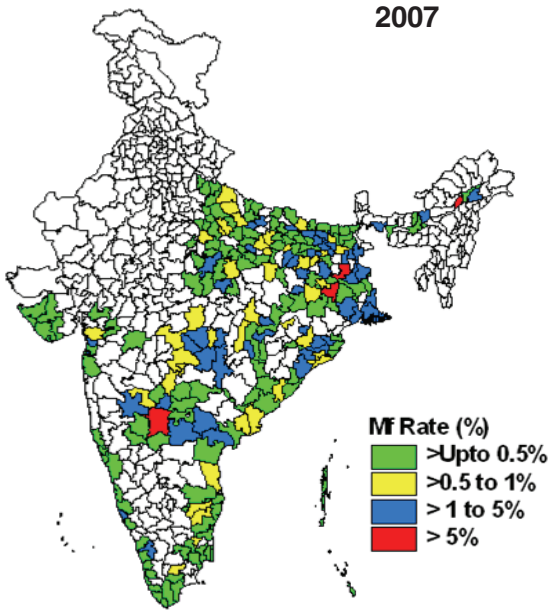
1969



1995



2007



CHAPTER 3

Implementation of Mass Drug Administration

1. INTRODUCTION TO MDA AS LF ELIMINATION STRATEGY

The concept of MDA is to approach every individual in the target community and administer annual single dose of anti-filarial drugs (DEC or DEC+Albendazole). This annual dose is to be repeated every year for a period of 5 years or more aiming at minimum 85 % actual drug compliance.

2. APPROACHES FOR DRUG ADMINISTRATION

The following are the options for the delivery of the drugs:

- **House to house approach:** every individual is administered with the drugs at his/her doorstep.
- **Booth approach:** People are asked to come at predetermined place (booth) for receiving the drug. The booths should not be located more than one kilometre walking distance away from the community.
- **Group approach:** Special population groups in places like schools, hospitals, offices, industries, prisons, etc. including community aggregations like developmental projects, market places, bus stands, railway stations, fairs, agriculture fields, etc. – are approached for delivery of the drug.

The recommended approach based on the past experience is "supervised drug administration by door to door visit supplemented with drug administration at booths and groups" preferably on a single day with two-day mopping up operations, instead of mere distribution of drugs.

Drug administrator is to administer the drugs in his/her presence (supervised administration). It is preferred not to

DRUG DOSAGE SCHEDULE

	Streamlined Dose			
	DEC		Albendazole	
Age in years	Dose (mg)	No.of 100 mg tablets	Dose (mg)	No. of 400 mg tablets
Less than 2 years	0	0	0	0
2 - 5 years	100	1	400	1
6-14 years	200	2	400	1
15 years and above	300	3	400	1

administer the drug on an empty stomach. The schools could be visited during lunch recess or any other suitable time. The local programme manager should adopt suitable drug delivery strategy in consultation with community leaders, school teachers, managers and supervisors of the workplaces to achieve high drug intake. The drug should not be left with the individual or relatives for swallowing it later.

3. DOSAGE SCHEDULE OF DRUGS

For operational convenience, age-wise dosage of single dose of 6 mg DEC per kg body weight, adjusted to average weight has been streamlined. Albendazole is to be given to all the eligible individuals as a single dose of 400 mg irrespective of age and weight. Both the recommended doses of DEC+Albendazole are to be taken together as a single dose.

4. PREPARATORY ACTIVITIES

The activities that are necessary in implementation of Annual Mass Drug Administration can be grouped into:

- Pre-MDA (preparatory)
- During MDA
- Post-MDA

5. PRE-MDA ACTIVITIES AT DIFFERENT LEVELS

5.1 Projection of DEC and Albendazole Requirements

The population already enumerated every year shall be used for calculating the drug requirement as per the formula given below. This requirement minus the balance of drugs (DEC and Albendazole) in hand received from previous year will be the requirement for the current year. The indent for the current year is to be placed through the state programme officer and communicated to the Directorate of NVBDCP, 22- Sham Nath Marg, Delhi-110 054. This indent should also be accompanied with "Utilization Certificate" (UC) for the fund provided by NVBDCP for ELF activities in the preceding year. The drugs must be received by the state at least three months before the scheduled date of MDA.

DEC	**100 mg** tablets: Multiply **total** population in endemic areas by 2.5
Albendazole	**400 mg** tablets: Multiply **total** population in endemic areas by 1

5.1.1 Flow of Indents for Drugs

Medical Officers of PHCs and Health Officers of municipalities will prepare the requirements of drugs and submit to the district level officers who in turn submit to state programme officer. State Programme Officer will consolidate and send to the Directorate of NVBDCP, Delhi.

5.2 Advocacy and Inter-sectoral Meetings/Workshops

a. State Task Force (STF) under the chairpersonship of Minister of Health & Family Welfare of

the State and Chief Secretary as Vice-Chairperson while the other members such as Addl. Chief Secretary, Health Secretary, Secretary (Finance), Secretary (Tribal), Secretary (ICDS), Secretary (Social Welfare), Secretary (Irrigation), Secretary (Rural Development/ Panchayat Raj), Secretary (Agriculture), Secretary (Local Self Govt), Secretary (Industry), Secretary (Forests), Secretary (Information), Secretary (Education), Director General of Health Services (State)/ Director of Health Services and State Programme Officer of Malaria & Filaria (Member Secretary) will constitute the STF. The State Mission Director, NRHM must be included as member of State Task Force. The broad Terms of Reference would be to review the progress of implementation and impact of MDA for ELF, policy decisions and modifications wherever warranted, to identify the roles & responsibilities of different departments for successful implementation of ELF, release of sufficient funds for ELF, etc. The first meeting of STF is to be held 90 days before MDA, the second meeting one month before MDA and the third meeting one-and-a-half-months after MDA to review the performance. The draft terms of Reference communicated earlier is at **Annex-3.3**.

b. State Technical Advisory Committee (STAC) under the Chairpersonship of Director General of Health Services (State) /Director of Health Services (State), while the members such as Director of Medical Education & Research, Director of Indian System of Medicine, Director of State Health Education Bureau, Prof. & HoD of Pharmacology, Prof & HoD of Medicine, Prof. & HoD of PSM, Prof. & HoD of Paediatrics, Prof. & HoD of Microbiology, Regional Director of ROH&FW, President of Indian Medical Association (State Branch) and State Programme Officer of Malaria & Filaria or VBD (Member Secretary) will comprise of STAC. The nodal state programme manager under NRHM must be included in STAC as member. The broad Terms of Reference of STAC would be to review the administrative, financial & logistics for ELF, functioning of State and District Societies, technical inputs for ELF, morbidity management of filaria cases, capacity building, performance & impact assessment, review the reporting system, inter-sectoral coordination, integrated vector control measures, operational problems, etc. The first meeting of STAC is to be held about 90 days before MDA (soon after STF meeting) the second meeting a fortnight before MDA and the third meeting one month after MDA to review the performance. The draft terms of Reference communicated earlier is at the **Annex-3.4**.

c. The instructions from the respective State Govt. State Mission Director NRHM must be issued for nominating the District Magistrate/District Collector as the Chairperson of the District-level Co-ordination Committee (DCC) and the district level programme officer for Filaria/ District Medical Officer (District Vector Borne Diseases Control Officer) as Member Secretary with other representatives from public-private and NGO sector as members. The district programme manager of NRHM must be included as member of DCC. It would be advisable to include social sector department such as education, youth affairs, social welfare, rural development, *Panchayat*, Municipal Corporation, information and broadcasting, etc. in the DCC. Representation from professional organisations/associations like SMA, CII, IMA, FICCI, ASSOCHAM, etc. may also be co-opted as members besides NGOs. The terms of reference for this committee may also be specified stating that this committee will oversee the

implementation of MDA programme of districts and take appropriate measures deemed fit to improve the consumption level of DEC tablets and monitoring its impact through microfilaria survey. During the 1st meeting, the members should be informed about the purpose of single dose mass drug administration and requested to extend their co-operation by suitably instructing their line staff in the periphery to co-operate in the programme. The National Filaria Day for conducting MDA throughout the endemic districts/PHCs and the preparatory work should be discussed in the first DCC meeting. This activity must start ***at least 90 days prior to the actual date of MDA.*** Action plan for MDA should be discussed in detail besides discussions on the achievements and problems during the MDA campaign (MDA) of previous year.

d. Conduct sensitisation / advocacy to all district level officials / NGOs / others: Depending on the number of persons to be sensitised, this can be conducted either on a single day or more than one day. What is important is that this opportunity is made use for explaining in detail the need for everybody to swallow the tablets. Explain that DEC and Albendazole tablets are safe drugs and there will be no side reactions practically at the recommended dosage schedule. However, some may develop mild reaction, which is mainly due to the effect of microfilariae getting killed in infected persons. These side effects are transitory in nature. If any serious reactions are noted, the same must be brought to the notice of the health department immediately. ***This activity must be planned within 10 days after the 1st district level co-ordination committee meeting and carried out within 60 days prior to the actual date of MDA. Advocacy workshops may be repeated if required to ensure optimal cooperation and active community involvement.***

e. Conduct First Press meet / Media Flash / All India Radio / Doordarshan / Cable TV: Write-up on Filariasis and its control can appear in columns of newspapers especially in local dailies, preferably in the local language. Appeals by the prominent leaders from the community, stressing *the importance of each and everybody swallowing DEC or DEC+Albendazole tablets should be issued*. Appeals should also include that *the side effects, if any, will be mild and the programme has taken all measures to provide treatment facilities if anybody reports about the occurrence of such reaction*. District Collector may brief the media about the MDA. ***This activity must begin with the first meeting of DCC and carried out 30 days prior to drug administration. (The prototype messages/writes up are annexed in Chapter-5).***

f. Organise district level training/sensitisation programme for community health officers/Deputy Civil Surgeons/Municipal Health Officer/MO PHC, etc : The content of the training should mainly focus on how to draw a micro-plan for their areas, how to estimate the drug requirement, IEC materials requirement and other logistics, the side effects anticipated, the knowledge and the drug requirement for management of these side effects, the downward flow channel for the supply of drugs, IEC materials, and upward flow of balance quantity of drugs and the reports. This activity **should be planned for a few days depending on the number of personnel to be trained.** Normally this will be for one day at district headquarters. The trainers will be the district level programme officers supported by the

state level programme officer, officers from Regional office for Health & FW, GOI and faculty from medical colleges. This activity should be completed at least 45 days prior to actual date of drug administration. This activity is to be followed by a similar training programme for the PHC/ Municipal level medical officer and paramedical staff at PHC headquarters and towns. Morbidity management with hands-on training should be included in all programmes. The officers of urban areas must be included.

g. Preparation of Village/Ward level micro-plan for drug administration / Inter personal communication activities in Sub-centres, Wards, PHCs and Municipalities: This is very important activity, which calls for the bottom up approach for planning. This micro-plan should contain details indicating the village/street/ward, its population, schools, dispensaries, etc. in order to determine the number of workers required for door to door drug distribution or booths to be established. However the grouping of houses is to be done based on the previous experience that in a single day how many families can be covered by one health worker/ health volunteer. Depending on terrain, location of houses whether sparsely/thickly populated, etc., it is estimated that a health worker can cover about 50 families on a single day depending upon the density of population if all the preparatory activities are done in advance. If the activities are started only at the time of MDA, it will be difficult to cover 50 houses in one day and result into low compliance. *This micro-plan must be received at every PHC level at least 30 days in advance of the day of drug administration. All the PHC-wise micro-plans so prepared should be compiled for the district. The involvement of Village Health & Sanitation Committee is essential and the PHC MO I/c or District authorities should issue instructions from NRHM to the representative of village Health & Sanitation Committees for providing full cooperation, involvement of ASHA, Aganwadis and other volunteers in the programme for social mobilization and acceptance of the programme by the community.*

h. Conduct 2nd meeting of District level Coordination Committee to review the District Action Plan (Manpower Assessment / Logistics- mobility / supervision, etc.) and preparedness for launching the MDA and take appropriate measures to plug the loopholes, if any: *This must be done at least 15 days in advance of the day of drug administration.*

i. Second press meet / media flash / All India Radio / Doordarshan / Cable TV / newspaper articles: *This must be done at least 15 days in advance of the day of drug administration.* Repeat the activities as explained earlier under first press meet/ media flash.

j. Organising workshop on Filariasis with special reference to MDA for private practitioners through professional associations like IMA, IAP, etc: 15 *days prior to MDA*

5.3 Training of Paramedical Staff at PHC / Municipal Level

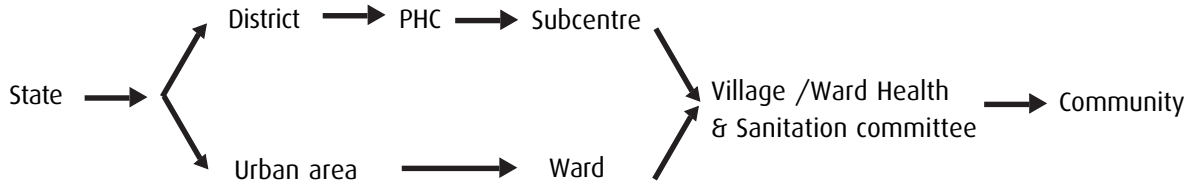
This activity should be carried out immediately after the district level training/sensitisation programme. The venue may be fixed at PHC/Municipal level. The trainers must be the medical officers of PHCs and Municipal Health Officers. The content of the training should also be the same as given under district level training but the medium of training shall be the local language. This activity must be carried out 30 days prior to drug administration.

5.4 Selection and Training of Drug Administrators

The ASHA, DDC, FTD holders, Anganwadi workers, teachers and other social workers should preferably be deployed wherever available since these workers are mainly local and have the confidence of the community. The drug administrator should not be a stranger to the community. They should be imparted one day training on Do's and Don'ts during MDA. Such training and orientation of Drug Distribution are to be carried out for interpersonal communication during their door to door visits. The drug distributors should carry household cards and maintain them properly. Role of Drug Distributors for supervised drug intake (timing of distribution especially whether the period would be post breakfast/lunch, etc) need to be explained clearly. Training of Drug providers at Mandal (Block HQ)/ PHCs/ Sub-centre/ Village level for rural areas and municipal level for urban areas must be completed 15 days prior to the date of MDA.

5.5 IEC/BCC Activities

Procurement and distribution of IEC materials: The flow of IEC materials and the drug is depicted in the following diagram. This can be modified depending on the local situation and requirements.



The steps explained under the Chapter-5 "Behaviour Change Communication" are to be followed. The activities should be started well in advance so that the IEC materials, training guidelines and enumeration registers are made available during the training programme at each level. It must also be ensured by discussion with the Regional Director of ROH&FW, MoH&FW, GOI, NRHM State Mission Director, Programme Coordinator NRHM, State Programme Officer, district level officials and medical/health officials to identify and segregate the materials that are to be produced at each level in order to avoid duplication and distortion of messages. *This activity should be completed at least* 45 days *prior to the date of MDA.* The prototype materials on IEC for replication in local language by the states are given in Chapter-5.

5.6 Enumeration of Households and Inhabitants in the Prescribed Household Registers and Household Cards

The health workers along with identified drug administrator will conduct household enumeration, update the Register and issue household cards in each village/ward during their routine visits, prior to MDA. During their house visit, apart from recording the name, age, gender of the members and any case of lymphoedema/hydrocele in the household, they should also explain the following information to the community:

- Need for MDA
- Date/month of MDA
- Consumption of drugs in presence of drug administrator
- Safety of the drugs

The health workers will carry **Flash cards** with them which have also key messages on its backside. They should also have IEC local kit for educating the community.

5.7 Microfilaria survey

Microfilaria survey is to be carried out one month before (prior to every MDA round) in identified sentinel and random sites. The detailed methodology has been described in Monitoring & Evaluation **chapter-6**.

6. ACTIVITIES DURING MDA

6.1. Drug Administration on the Fixed Day

Supervised administration of the drugs is to be adhered to the maximum extent possible by door to door visit **supplemented** with other methods by the drug administrators. The National Filaria Day is fixed during November when the drugs are administered. To cover the absentees, mop-up is to be carried out.

6.2. Mopping-up Operation to enhance the Coverage Level

This should be planned for two days following the day of drug administration so that the left out households, if any, or poorly covered areas may be taken up so as to maximize drug consumption. Since each drug administrator is allotted 50 households covering 250 persons, two drug administrators in the adjacent areas can form a team for mopping up operations covering 500 population. In areas with low coverage, the supervisory staff should assist in improving drug compliance.

6.3. Management of Side Effects of Drugs

These drugs may produce side effects in 1-2% of the treated persons. These side effects are self limiting:

(a) Non-specific drug related reactions include headache, anorexia, nausea, abdominal pain, vomiting, dizziness, weakness or lethargy. These symptoms begin within 1-2 hours of taking the drug and persist for a few hours.

(b) Specific parasite related allergic reactions due to destruction of microfilariae and adult worms include fever, local inflammations around dead worms and pruritus.

Symptomatic treatment of the reactions with antipyretics/analgesics and anti-allergic agents should be given. The side effects also disappear spontaneously with or without symptomatic treatment.

6.3.1. By Drug Administrators

In case of side effects, he/she should inform the health worker immediately for management.

6.3.2. By Health Workers

He/she should administer symptomatic drugs. In case of doubt, Medical Officer's services may be availed including case management and referral.

6.4.Organise Rapid Response Teams for Management of Side Effects

This is an important activity. Medical teams at strategic places can be formed and the people and the drug administrators are informed about the availability of such teams including the phone numbers so that they report directly to these teams at times of emergency. These teams should be in position for the period from the day of drug administration till the completion of mopping up operations. The team should comprise of minimum one medical officer supported by a staff nurse and a pharmacist and ambulance. The team should have an ambulance with mobile phone and essential life saving drugs.

6.5.Supervision of the Drug Administration

On the days of drug administration and mopping-up operations, it must be supervised to ensure that the drugs are physically administered to each and every eligible individual. One supervisor should be identified for every 5 to 10 drug administrators depending upon the terrain and availability of such personnel who are also trained in dosage schedule, IEC, etc. This must be indicated in the micro-plan itself. The supervisor should also ensure that no area/village is omitted. He/She must also carry with him/her some quantity of drugs so that if shortage with any drug administrator is noticed during field visits, replenishment is made or diversion is made from surplus area. **The supervisors must be trained to select at least 10% of the houses** in his / her area to conduct consumption survey, side reaction survey and communication methodology survey in these families. *These surveys are to be completed within one week after the mass drug administration. The cross-checking report by the supervisors must be submitted to the MO PHC immediately.* The supervisor will submit his visit report to PHC on the following format:

Sl. No.	Name of Village	Total No. of houses surveyed	No. of house holds (10%)	Number of individuals reported to have consumed the drugs	No. reported with side effects	Which communication methodology is most acceptable in the area
1						
2						

7. POST-MDA ACTIVITIES

7.1 Organisation of Sample Survey for Assessing Drug Coverage and Consumption

Refer Chapter 7 on Independent Assessment

7.2 Conduct Post-MDA Review at Subcentre/PHC/Ward/Municipal Level to highlight the Strengths/Weaknesses in Implementation of MDA in order to identify Village/Street where the Drug Administration Coverage is less and take appropriate action for improving the coverage

This is to be done within a period of **15 days** after MDA.

7.3 Consolidation and Submission of Reports by PHC/Municipality to District Headquarters along with Review Remarks

This is to be done within a period of **20 days** after MDA.

7.4 Consolidation of PHC/Municipal Reports at District Headquarters and Review of MDA by the 3rd Meeting of District-Level Coordination Committee and Record the Committee's Observations

This is mainly done to evaluate the coverage levels and to identify the field problems which should be recorded so that during next round, solutions must be identified to overcome the same. This is to be done within **25 days** after MDA.

7.5 Submission of Final Report to the State Programme Officer with copy forwarded to the Directorate of National Vector Borne Disease Control Programme along with the remarks of the District Coordination Committee

The final report incorporating the percentage of coverage of drug consumption as per the reports of drug administrators, consumption coverage as per sample assessment survey, the quantity of drugs utilized, results of side reaction survey and IEC activity, including the funds utilised and the funding sources, etc. are to be submitted within 30 days after MDA. The proformae are given at *Annex.3.2*.

8. MONITORING & EVALUATION

Monitoring & evaluation is an integral component of any programme or campaign as there is a need for:

- demonstrating that particular intervention, medium reached and served its purpose;
- obtaining guidance for programme decisions;
- Determining whether improvements in health outcomes are causally linked to a given intervention or a given behavioural change.

In other words, the knowledge of what works at each level of implementation could provide support for continuing and improving useful interventions and discontinuing and reallocating resources which are non-viable ones.

The programme or initiative can be evaluated at one or more levels: process, outcome, impact.

8.1 Process evaluation

The main objective of process evaluation would be assessment of all programme inputs, activities and stakeholder reactions.

8.2 Outcome evaluation

The main objective for outcome evaluation would be assessment of Campaign/Mission approach on target behaviours.

8.3 Impact evaluation

The main objective of impact evaluation would be assessment of:

- changes in mf rate
- Changes in number of hydrocele cases and alleviation of suffering by monitoring increased number of patients following foot care and reporting reduced number of acute attacks.

8.4 Details of Concurrent and Consecutive Evaluation

1. Concurrent evaluation of the BCC campaign at each level of implementation may be done through central/state/district observers at different levels as shown below:

This evaluation may be scheduled simultaneously with implementation of various activities under the campaign.

2. Stakeholder interviews: Assessment of reactions, participation of inter-sectoral partner organizations may be undertaken at each level of campaign implementation.

Observers	Level of evaluation
Central team	State/District/city/town/Block/Subcentre/village
State	District/city/town/Block/Subcentre/village
District	Block/Town/Subcentre/village

3. Consecutive evaluation/independent appraisal by Independent Institutions may be scheduled after submission of the above-mentioned concurrent evaluation reports by different observers and compilation of a comprehensive report on implementation of various activities (independent assessment described in **Chapter- 7**).

4. Monitoring and Evaluation Indicators need to be built on:

   (a) (*input* indicators) - Research, plans, resources, supplies, staff, etc.
   (b) (*output* indicators) – Advocacy, Inter-sectoral collaboration, Social mobilization and **communication** activities
   (c) (*outcome* indicators) – Increased compliance; increased number of patients following foot care (on the previous day of the survey)

8.5 Monitoring of Implementation

Monitoring of implementation is a vital element in programme management that enables us to gauge the success of the strategy for elimination of lymphatic filariasis. Monitoring encompasses the following functions:

i Assist programme managers at the National and State levels to achieve the programme objectives and goals;
ii Assist programme managers to assess the current status of the programme; and
iii Assist programme managers to assess the impact of interventions

9. PROFORMA FOR MAINTAINING REGISTERS AT DIFFERENT LEVELS

MDA-1

Village Level

Details of Mass Drug Administration at Village

Name of Village_____ Name of Subcentre _____

Name of PHC_____ Round _____ Date of reporting_____

Sl. No	Name of individuals indicating Head of Family first	Age (years)	Sex (M/F)	Date Month Year 2009			Date Month Year 2010			Date Month Year 2011		
				No. of DEC tablets given if not accepted, please write the code-P/Y/S/H/A/R/L/O	No. ALB. Tabs. (one tablet each for all age groups)	Side effects if any (F/H/B/N/V/O	No. of DEC tablets	No. ALB. Tablets (one tablet each for all age groups)	Side effects if any (F/H/B/N/V/O	No. of DEC tablets	No. ALB. Tablets (one tablet each for all age groups)	Side effects if any (F/H/B/N/V/O

*Names of all the members of family to be entered as maintained in Family Register and the **code for swallowing the drug in the presence of Drug Administrator or the code for not taking the drug may be given as follows against each family member:*

T= swallowed the drug in the presence of drug administrator and the code for not taking the drug: **P**=Pregnant, **Y**=Children below two years of age, **S**= seriously sick, **H**= Handed over the drug to the family member, **A**= Absent, **R**= Refused, **L**= Locked House, **O**= Other reasons (Specify),

*** **Code for side effects of drug:** F= Fever, H= Headache, B= Body pains, N= Nausea, V= Vomiting, O= others (specify)

Note= The balance tablets may be returned to PHC after completion of MDA (i.e. after mopping up operations) with details of tablets received, tablets consumed and closing balance..

(The above table may be got printed one for 50 households i.e. about 250 persons) so that each drug distributor is given one register during MDA. The same register may be used for three years or more which will save time in writing the name every year. Additional names can be added at the bottom row of each family .

MDA-2

PHC Level:

Details of Mass Drug Administration at PHC

Name of PHC _____ Name of District _____

Round _____ Date of reporting _____

S.No.	Name of Sub-centre	Total Population	*Eligible Population	Population covered in MDA	No. of tablets supplied		No. tablets administered		Balance of tablets at PHC	
					DEC	Alb.	DEC	Alb.	DEC	Alb.
Total										

Eligible Population = Total population – Population excluded from drug therapy (Children below two years age, pregnant women and very sick persons); Alb. = Albendazole

MDA-3

District Level:

Details of Mass Drug Administration at District

Name of District _____ Round _____

Date of reporting_____

S.No.	Name of PHC	Total Population	*Eligible Population	Population covered in MDA	No. of tablets supplied		No. tablets administered		Balance of tablets at PHC	
					DEC	Alb.	DEC	Alb.	DEC	Alb.
Total										

Eligible Population = Total population – Population excluded from drug therapy (Children below two years age, pregnant women and very sick persons); Alb. = Albendazole

MDA-4

State Level:

District-wise Mass Drug Administration in the state

Name of District _____ Round _____

Date of reporting_____

S.No.	Name of district	Total Population	*Eligible Population	Population covered (%)	No. of tablets supplied		No. tablets administered		Balance of tablets at District	
					DEC	Alb.	DEC	Alb.	DEC	Alb.
Total										

MDA-5

Central Level:

State-wise Programme of MDA

S.No.	Name of State/UT	No. of MDA Districts	Total Population	*Eligible Population	No. of tablets supplied		No. tablets administered		Balance of tablets at State/UT	
					DEC	Alb.	DEC	Alb.	DEC	Alb.

10. FORMATS FOR REPORTING AT DIFFERENT LEVELS

Planning and implementation of any disease control programme depend on information support. Information is derived from data and hence the quality of information depends on how the data are collected and the nature of the "instrument" employed in the collection procedure.

Therefore, it is essential to develop appropriate formats for data capturing. Design of the forms to be used for recording data depends on the operational issues that need to be addressed. The following formats will be used during the MDA campaign:

MDA 1 to MDA 5 give details of MDA forms to be used at different levels for making records starting from village/ward level to state level. The formats to be filled by the drug administrators and he/she will submit it to health workers of his/her area. The Roadmap of MDA activities is given at **Annex. 3.1**. The consolidated data formats to be submitted by the State/District are given at **Annex. 3.2**.

Guidelines for formation of State Task Force and State Technical Advisory Committee are given at **Annex. 3.3 and 3.4** respectively.

Annex. 3.1

Roadmap for Preparatory Activities of MDA 20____

S.No	Type of activity	Period	Planned dates	Actual dates
1	States to send indent for drugs requirement	January/ 1 year before MDA		
2	Conduct training for Trainers (District level Officers)	150 days prior to MDA		
3	Conduct meeting of National Task Force under the chairmanship of DGHS, Govt. of India.	120 days prior to MDA		
4	Conduct State Level Task Force meeting under the chairmanship of HFM	90 days prior to MDA		
5	Conduct State Level Technical Advisory Committee meeting under the chairmanship of DG/DHS	90 days prior to MDA		
6	NVBDCP to send indent for drug requirement following tender formalities and to procure DEC	120 days prior to MDA		
7	Mapping in selected districts	120 days prior to MDA		
8	Conduct 1st District coordination committee meeting	90 days prior to MDA		
9	Conduct 1st press meet/media flash	90 days in advance		
10.	advocacy/ sensitisation workshop to district officials/NGOs	60 days prior to MDA		
11	Organise district level training for medical / health officials	45 days in advance		
12	Preparation of village/ward level micro plan	30 days prior to MDA		
13	Review of micro-plans at district.	15 days in advance		
14	Conduct 2nd District Coordination Committee meeting	15 days in advance		
15	2nd press meet/media flash	15 days prior to MDA		
16	Complete the baseline data collection	15 days prior advance		
17	Conduct training to paramedical staff	30 day prior to MDA		
18	Conduct training to drug providers	15 days prior to MDA		
19	Carryout Interpersonal communication & update enumeration	One week prior to MDA		
20	Carry out IEC activities	45 days in advance and continue till MDA		
21	Conduct subcentre level leaders meeting	5 days prior to MDA		
22	Distribute the drugs to the villages	One week prior to MDA		
23	Conduct workshop for medical practitioners	15 days prior to MDA		
24	Drug administration day (MDA)	0 Day		
25	Carry out mop up	2 Days		
26	Organise supervision	0 to 2 day mopping up operation		
27	Position the rapid response teams for treating drug reactions, if any	From day 1 to day 4 following drug administration		
28	Organise sample surveys to assess actual drug compliance	Within 14 days of MDA		
29	Conduct post-MDA review by subcentre / PHC / Municipality	Within 15 days after MDA		
30	Consolidate and submit to Dist. Hqrs.	Within 20 days after MDA		
31	Centre to conduct independent assessment on MDA	Within 20 days after MDA		
32	Review of the district consolidated report by District. Coordination Committee in its 3rd Meeting	With in 25 days after MDA		
33	Submission of final report on MDA by states	Within 30 days after MDA.		
34	Consolidation of final report at central level & dissemination	Within 90 days after MDA		

Annex. 3.2

Table 1: Update on the distribution of Lymphatic Filariasis: Year 200....
(To be compiled and sent by the State Programme Officer to Dte. NVBDCP, Delhi)

*State:*_____

*Population:*_____

*Total No. of districts:*_____

No. of disease cases: _____
(Lymphatic Filariasis)

Endemic District			Non-endemic District			Unsurveyed District		
Sl. No.	Name of the district	Population	Sl. No	Name of the district	Population	Sl. No.	Name of the district	Population
	Total=			Total=			Total=	

Note: (i) 2001 census population may be given or latest health enumeration data

(ii) Year of survey may be given in parentheses after the name of district

Table 2: Survey of Sentinel and Spot Check Sites in MDA District: Year 20_____

Name of MDA District:_____

Separate forms are to be filled for each district and a copy to be endorsed to the Dte. NVBDCP

Date(s) of MDA:

Sl. No.	Particulars	Name of the site	Date of survey	Date of MDA in the site	No. of Persons Examined	No. +ve for Mf	Mf Rate (%)	No.+ve for Disease	Disease Rate (%)
1	Sentinel (Rural)								
2	Sentinel (Rural)								
3	Sentinel (Rural)								
4	Sentinel (Urban)								
Sentinel sites sub Total (A)									
1	Spot Check (Rural)								
2	Spot Check (Rural)								
3	Spot Check (Rural)								
4	Spot Check (Urban)								
Spot Check Sites Sub Total (B)									
Grand Total (A+B)									

N.B. (i)The denominator for calculating Mf rate and Disease rate is same

Table 3: Mass Drug Administration (MDA) Coverage: Year 200....

Name of the District	Date (s) of MDA	Total Population of the district	Eligible Population for MDA	No. of people received Drug	% people received drug as per records	% people actually consumed drug as per field investigation

Table 4: Training of Health Staff for ELF (Elimination of Lymphatic Filariasis) during Year 20_____

Administrative level	MDA				Morbidity Management				Both MDA & Morbidity Management			
	No. courses organized	No. staff sanctioned*	No. vacant positions	No. staff trained	No. courses organized	No. staff sanctioned*	No. vacant positions	No. staff trained	No. Courses corganized	No. Staff sanctioned*	No. vacant positions	No. staff trained
State		1._____										
		2._____										
		3._____										
		Total=										
District level		1._____										
		2._____										
		3._____										
		Total=										
Lab. Technicians **												
CHC level		1._____										
		2._____										
		3._____										
		Total=										
PHC level		1._____										
		2._____										
		3._____										
		Total=										
Grand total		1._____										
		2._____										
		3._____										
		Total=										

* 'No. of staff sanctioned' (in the three columns of Table-4) should reflect the staff of Health and other sectors required to be trained for ELF

** No. of Lab. Technicians trained in LF microscopy may be reflected under MDA column.

The rows under each administrative level (1, 2, 3 ...) should reflect broad categories of officers/staff like state officials, district officials, medical officers, biologists, inspectors, supervisors, technicians, peripheral workers, volunteers, etc. in the respective administrative level

Table 5: Health infrastructure available with trained health staff to manage Lymphoedema patients during Year 20____

Name of health care	No. of centres with skilled stafff	No. of filaria patients managed	No. of hydrocele operations undertaken
State Level			
District Level			
CHC Level			
PHC Level			
Subcentre Level			

Note: The **'No. of centres with skilled staff'** should include the following:

State level – State level training centres, Medical Colleges, Research institutions, etc., **District level** –Training centres, Medical Colleges, Research institutions, etc. , **CHC/PHC & Subcentre levels**–Training centres and other institutions.

Table 6: IEC/BCC Campaign for MDA: Year 20___

District: _____

Materials/Media	No.	Cost (in Rs.)	Activities	No.	Cost (in Rs.)
Banner			Processions		
Handbills			Group Meetings		
Posters			Melas		
Identification Cards			Radio Talks		
Cinema Slides			Drum beating		
Newspaper Adv.			Mike announcements		
Doordarshan			Skits & Nukkad plays		
All India Radio			Quiz programmes in schools		
Cable TV			Logistics including transportation		
Video quickies			Interpersonal communication		
Cassette player			Telephone canvassing		
Any other (specify)			Any other (specify)		

Table 7: Serious Adverse Experiences (SAE): Year 20_____

Name of District	No. of persons with SAE	Type of Reactions					Clinical outcome	Required Hospital Care	Remarks
		1	2	3	4	T			

1= Fever, 2= Nausea/Vomiting/Headache, 3= Lymphoedema, etc., 4= Others (specify), T= Total

Table 8: Drug Requirements

Sl. No.	Inventory Summary	DEC 100 mg	Albendazole (400 mg)
1	How many tablets were in stock on 01.01.20....		
2 (a) (b)	How many tablets were received since 01.01.20.... From which source(s) the tablets were received		
3	How many tablets were used during MDA		
4	How many tablets have been destroyed since 01.01.20....		
5	How many tablets have been lost/stolen or damaged since 01.01.20....		
6	How many tablets balance in stock as on		
7	Please list each batch/lot of tablets remain in stock, the number of useable tablets per batch/lot and the corresponding expiry date.		
8	How many more tablets are required for the next round.		

Note: Calculation of drug requirements

*(i) **DEC 100 mg: 2.5 x Total population.** The total requirement of DEC tablets of 100 mg should be as per this formula.*

*(ii) **Albendazole 400 mg : 1 x Total population***

(iii) The requirement under item 8 may be given after deducting the balance shown under item 6.

The name, designation and consignee's address with postal pin code and telephone No. and fax No. along with quantity may be given (The State Programme Officer should be the consignee for drugs preferably as it facilitates the distribution of drug)

Table 9: Statement of Funds Allotted and Utilised: Year 20_____.

	Central Funds						Sate Funds		
	Funds Allotted with dates		Funds *Utilised with dates		Balance of Funds as on.....		Allocated with dates	Utilised* with dates	Balance as on ....
	RD	State	RD	State	RD	State			
IEC									
Training									
Other activity (specify)									
Total									

Give the list of organisations as the footnote to whom the funds were disbursed

Table 10: Line Listing of Filaria patients

Sl. No.	Name of patient	Name of Head of family & address	Village	Popul-ation	Panch-ayat	Age	Sex	Disease affected part					Time of starting of disfigur ement	Period of stay in the district	Date of survey
								Leg	Hand	Scrotum	Breast	Others			

Table 11: Consolidated district report on Lymphoedema Morbidity Management and Hydrocele cases: 2004 to 2009

(The annual New Capture Format is adopted for 6 years or more)

District:_____

Sl. No.	Details	2004	2005	2006	2007	2008	2009
1	No. of LF cases line listed						
2	No. of LF cases trained during this month for MM						
3	Balance to be trained						
4	No. trained LF cases practising MM						
5	No. of hydrocele cases line listed						
6	No. of ineligible for surgery						
7	No. of hydrocele cases operated						
8	Balance to be operated						

Table 12: Details of DCC Meetings in 20____

Designation of Members	Date of First DCC Meeting	Date of Second DCC Meeting	Date of Third DCC meeting

Table 13: Proposal for withdrawal of MDA if qualified

Sl.No.	Name of District	Sample size as per ELF Guidelines	No. of MDA Rounds completed	Proposed dates of Assessment of mf among 3000 children

Annex.3.3

DRAFT

TERMS OF REFERENCE FOR

STATE TASK FORCE FOR ELIMINATION OF LYMPHATIC FILARIASIS

1. Need for State Task Force (STF)

In view of expansion of Mass Drug Administration (MDA) covering all the Lymphatic Filariasis endemic districts in the state, it is necessary to review the programme to record its achievements & drawbacks in the preceding year(s) in respect of financial, administrative and technical components, which will enable the state to rationalize the inputs so that there would be better implementation of the programme within the available resources effectively in the succeeding years and to consolidate the achievements accrued by the cost-effective strategy.

2. Constitution of STF

The following members will constitute the STF

1. Minister of Health & FW	-	Chairperson
2. Chief Secretary	-	Vice Chairperson
3. Addl. Chief Secretary	-	Member
4. Health Secretary	-	Member
5. NRHM State Mission Director	-	Member
6. Secretary (Finance)	-	Member
7. Secretary (Tribal)	-	Member
8. Secretary (ICDS)	-	Member
9. Secretary (Social Welfare)	-	Member
10. Secretary (Irrigation)	-	Member
11. Secretary (Rural Development/ Panchayat Raj)	-	Member
12. Secretary (Agriculture)	-	Member
13. Secretary (Local Health Govt.)	-	Member
14. Secretary (Industry)	-	Member
15. Secretary (Forest)	-	Member
16. Secretary (Information)	-	Member
17. Secretary (Education)	-	Member
18. Director General of Health Services (State)/ Director of Health Services	-	Member
19. Regional Director (H&FW), Govt. of India	-	Member
20. State Programme Coordinator, NRHM	-	Member
21. State Programme Officer (Mal. & Fil. or VBD)	-	Member Secretary

(In the state where different programme officers are looking different vector borne diseases such as Malaria, Filaria, Kala-azar, JE, Dengue and Chikungunya, all should be invited)

Where the designated post mentioned above does not exist, the senior-most administrative head of the concerned department will participate in the STF. The State Task Force can co-opt members from the relevant public & private sectors including NGOs, CBOs, FBOs, Women-self help groups, Youth Clubs, etc. who are to be involved in intersectoral coordination.

3. Terms of Reference

The proposed Terms of Reference are:

To Review:

(i) **Progress of Implementation:** To review the progress and impact of MDA for elimination of lymphatic filariasis in the state.

(ii) **Policy Decisions:** To suggest modifications for effective implementation in the state policy decisions, wherever warranted, to resolve programme/policy issues of administrative, financial and technical nature as and when required.

(iii) **To spell responsibilities** of various departments for their contribution and the concerned departments should convey these responsibilities to ground level staff.

(iv) **Budget:** To decide/recommend/ensure the release of sufficient funds up to the peripheral levels for elimination of lymphatic filariasis and reflect the same in the state budget.

(v) Any other relevant matter pertaining to the programme

4. Frequency of STF Meetings

The STF may hold the first meeting 90 days before the proposed date of MDA and the second meeting one month before MDA. The third meeting may be held one-and-a-half months after MDA to review the performance. The recommendations made in each STF meeting will be communicated to all the members with a copy endorsed to the Ministry of Health & Family Welfare (GOI), Directorate General of Health Services (GOI) and Directorate of NVBDCP within 15 days of holding the meeting.

5. Follow-up Action of STF Recommendations

The Action Taken Report is to be submitted to Member-Secretary by the concerned departments within a fortnight after receipt of STF recommendations or as per the time indicated in the specific recommendation(s).

6. Background Material on ELF to be made available to STF Members along with the meeting notice.

The background material listed below may be provided to all the members so that they get apprised about the salient aspects of the programme.

6.1 Strategy for the Elimination of Lymphatic Filariasis in India

The strategy being adopted by the country for ELF i.e. MDA for interruption of transmission and morbidity management for disability alleviation may be described with the modifications/ innovations made in the state and the updated report need to be presented to STF members.

6.2 Goal and Objectives

6.2.1National Health Policy (2002) Goal:

To eliminate lymphatic filariasis from India by the year 2015.

6.2.2 Objectives:

(i) To reduce and eliminate transmission of LF by Mass Drug Administration of anti-filarial drugs (Diethycarbamazine Citrate (DEC) or DEC+Albendazole)

(ii) To reduce and prevent morbidity in affected persons

The goal and objectives will be achieved through the existing health services with improved health care delivery system and enhanced activities by involving the NGOs, private and public sectors. IEC for integrated vector borne diseases control approach will be implemented through intersectoral cooperation and coordination.

6.3 Basic Principles of Strategy for the Single Dose Mass Drug Administration

(i) Interruption of disease transmission and

(ii) Treatment of problems associated with lymphoedema (disability prevention and control)

During a large-scale treatment programme, the key to success is the ability of the peripheral (village/subcentre) level team involved in MDA to communicate effectively with the community. Once the mutual confidence is built-up, the communication with people becomes easy and the treatment objectives and nature of possible reactions would be explained to them. The success of the strategy also depends on the speed of control measures put forth in order to prevent parasite becoming re-established within a stipulated period of time.

6.4 Mass Drug Administration

The Operational Guidelines for ELF have reiterated that in MDA, anti-filarial drugs are given to almost everyone in the community except children under 2 years, pregnant women and very sick patients. Everyone may be considered to be more or less equally exposed to the infection.

The single annual dose mass therapy with DEC or DEC+Albendazole tablets has been found to possess the following advantages:

(i) It avoids the cost of a mass blood examination.

(ii) All members of the community receive treatment, nobody feels left out and compliance is, therefore, enhanced

(iii) It is as effective as 12-day DEC therapy for public health measure.

(iv) It has lesser side effects thus enhancing public compliance.

(v) It involves decreased delivery cost.

(vi) It does not require complex management infrastructure.

(vii) It can be integrated into the existing primary health care system for delivery and compliance.

(viii) Single dose mass treatment annually in combination with other techniques had either eliminated or markedly reduced the transmission of lymphatic filariasis in some countries.

6.5 Side Effects of DEC

DEC is a safe drug, which has been in use in India for more than 50 years. However, DEC may produce side reactions in a small proportion of population especially among those harbouring infection (microfilaria in circulating blood), who are usually symptomless (apparently healthy). The drug reactions may be of two kinds:

(a) Those due to drug itself (Pharmacological toxicity): Headache, anorexia, nausea, abdominal pain, vomiting, dizziness, weakness or lethargy. These symptoms begin within 1-2 hours of taking the drug and persist for a few hours.

(b) Those due to allergic reactions due to destruction of microfilariae and adult worms (attributable to filaricidal action): fever, local inflammations around dead worms, pruritus.

These reactions are transitory and subside within two days which can be treated with symptomatic therapy.

6.6 National Filaria Day (NFD)

Mass Drug Administration is to be observed on a single day as National Filaria Day. Besides free drug distribution, there are additional inputs in the form of IEC, POL expenses, training, monitoring and evaluation of the project. All the endemic States/UTs may observe NFD on a commonly accepted day after mutual consultations and prior approval of Govt. of India.

6.7 MDA Data of the Preceding Year(s)

The Member-Secretary with the inputs may monitor MDA data of the preceding year(s) and circulate to all the members at least a fortnight before the meeting along with meeting notice. The information may be provided with relevant write-up.

The Member Secretary should also brief on the progress made in hydrocele operations and target for ensuing years. In addition, the report should also include the demonstration and publicizing the home based morbidity management for lymphoedema management and the number of patients practising it.

Annex.3.4

DRAFT

TERMS OF REFERENCE FOR STATE TECHNICAL ADVISORY COMMITTEE FOR ELIMINATION OF LYMPHATIC FILARIASIS

1. Need for State Technical Advisory Committee (STAC)

In view of expansion of Mass Drug Administration (MDA) covering all the Lymphatic Filariasis endemic districts in the state, it is necessary to review the programme to record its achievements & drawbacks in the preceding year(s) in respect of technical, operational and administrative components, which will enable the state and district programme managers to augment the most feasible and cost-effective strategy so that there would be better implementation of the programme within the available resources effectively in the succeeding years and to consolidate the achievements by cost-effective measures.

2. Constitution of STAC

The following members will constitute the STAC:

1. Director General/Director of Health Services (State)		Chairperson
2. Director of Medical Education & Research	-	Member
3. Director of Indian System of Medicine	-	Member
4. Director, State Health Education Bureau	-	Member
5. Prof. & HoD Pharmacology	-	Member
6. Prof. & HoD Medicine	-	Member
7. Prof. & HoD PSM	-	Member
8. Prof. & HoD Paediatrics	-	Member
9. Prof. & HoD Microbiology	-	Member
10. Regional Director (H&FW), GoI	-	Member
11. President, Indian Medical Association, State Branch	-	Member
12. Nodal State Programme Manager (NRHM)	-	Member
13. State Programme Officer (Mal & Fil or VBD)	-	Member-Secretary

(In the state where different programme officers are looking different vector borne diseases such as Malaria, Filaria, Kala-azar, JE, Dengue and Chikungunya, all should be invited)

(The Director General of Health Services of the state will chair the STAC where such a post exists and DHS will be a member while in other states, the DHS will chair the STAC. The State TAC can co-opt other expert members representing organizations like ICMR, Medical Colleges, mother NGOs, FBOs, CBOs, women - self help groups, youth clubs, etc).

3. Terms of Reference

The proposed Terms of Reference are:

(i) Review

(a) the administrative, financial and logistics for ELF at various levels,

(b) the functioning of the State and District Vector Borne Diseases Control Programme Societies.

(c) to provide technical inputs for the effective implementation of elimination of lymphatic filariasis and management of cases with filariasis

(ii) Capacity Building

(a) Review the technical guidelines and training material available and if any modification is required need to be communicated to Dte. of NVBDCP, Delhi

(b) Training load & services i.e. training programmes organized or to be organized for various categories of personnel – target (total personnel to be trained in the state in respect of various categories separately) – achievement against each target.

(c) Capacity for organizing skill based training involving, Trainers at State and District levels, MO-PHC, Paramedical Staff, Block Extension Educators (BEEs), Drug Distributors, health volunteers, laboratory technicians, etc. – Review of quality of training and developing of core trainers.

(iii) **Logistics :** Assess the availability of DEC (to be supplied by GOI) and remedial drugs and deployment of Rapid Response Teams to manage side effects of DEC.

(iv) **Review the performance** of the programme on drug compliance and methods to improve actual compliance >85%.

(v) **Assess the impact** of MDA on microfilaria rate as per guidelines of ELF.

(vi) **Assess the performance** of morbidity management of lymphoedema cases and review the augmentation of hydrocelectomies by the identified CHCs and Hospitals as well as organization of special camps.

(vii) **Review the MIS** contents, frequency and methodology of reporting.

(viii) **Review intersectoral coordination** and review the efforts undertaken towards IEC/Social mobilization and Public-private partnership

(ix) **Review integrated vector control measures** including personal prophylactic measures, insecticide treated mosquito nets, larvivorous fish and environment and minor engineering measures.

(x) **Review** the nature and extent of operational problems affecting the programme, as well as financial and staffing constraints affecting drug compliance.

(xi) Any other relevant matter pertaining to MDA

4. Frequency of STAC Meetings

The STAC may hold the first meeting 90 days before MDA soon after STF meating and the second meeting a fortnight before MDA. The third meeting may be held one month after MDA to review the performance. The recommendations made in each STAC meeting will be communicated to all the members with a copy endorsed to Directorate of NVBDCP within 10 days of holding the meeting.

5. Follow-up Action of STAC Recommendations

The Action Taken Report is to be submitted to Member-Secretary by the concerned departments within a fortnight after receipt of STAC recommendations.

6. Background Material

As given under STF, the same may be provided to all the members so that they get apprised about the salient aspects of the programme.

CHAPTER 4

Implementaion of Disability Prevention & Management

In order to gain confidence of the community on MDA, the patients with filarial lymphoedema and hydrocele have also to be taken care of. Under ELF programme, the two activities namely management of filarial lymphoedema and management of hydrocele have to be emphasized. Effective, simple and cheap techniques have now been available to minimize the suffering caused by the acute and chronic manifestations of the disease. The management of filarial lymphoedema and disability prevention can be achieved through cost-effective home-based management and the hydrocele can be operated through the available standard surgical methods.

- Detection and Management of lymphoedema have to be a continuous process which need to be carried out throughout the year by the paramedical staff, closely monitored by the Medical Officers.
- For prevention of disability, all the cases should be enlisted by the paramedical staff through the prescribed format following the standard guidelines for line listing as given in Chapter - 2.
- These lists should also be linked to the CHCs / Taluk hospitals for surgical intervention of hydrocele.

1. LYMPHOEDEMA MANAGEMENT

Filaria patients with damaged lymphatic vessels often have more bacteria on the skin than usual. The large number of bacteria on the skin, multiple skin lesions, slow lymph fluid movement and the reduced ability of the lymph nodes to filter the bacteria cause inflammation characteristic of an acute attack. Repeated bacterial infections precipitate frequent acute attacks, which further damage the tiny lymphatic vessels in the skin, reducing their ability to drain fluid. This vicious cycle continues, aggravating the condition of the patient.

The lymphoedema management involves the following components:

- Washing,
- Prevention and cure of entry lesions,
- Elevation of the foot,
- Exercise,

- Wearing proper footwear,
- Management of acute attacks.

2. WASHING

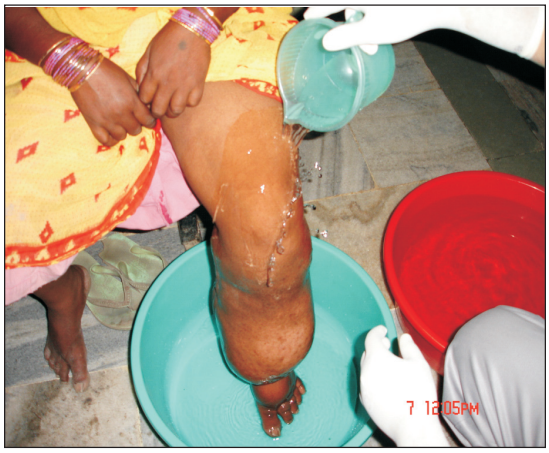
Good hygiene and treatment of entry lesions are important measures for managing lymphoedema. The patients should be encouraged to practise skin care and hygiene.

2.1. Supplies needed

(i) Clean water at room temperature, (ii) Soap (least expensive soap without perfume is usually the best), (iii) Basin, (iv) Chair or Stool, (v) Towel, (vi) Footwear within easy reach.

2.2. Check skin for

(i) Entry lesions, including very small lesions between the toes that can hardly be seen, (ii) Entry lesions between the toes may cause itching. Scratching can further damage the skin and can provoke an acute attack; tell patients to avoid scratching, (iii) Toe nails should be trimmed in such a way that the skin is not injured. Do not try to clean under the nails with sharp objects as these can cause entry lesions.

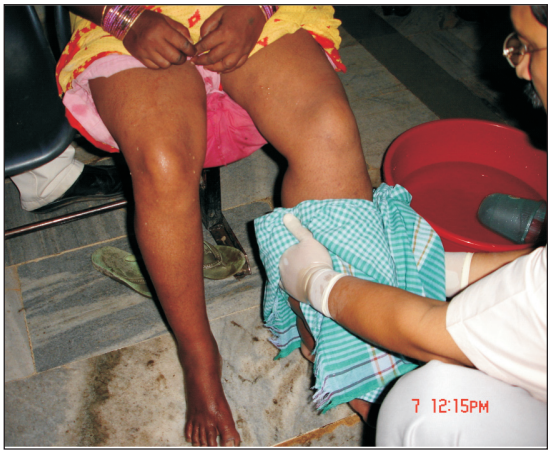


Washing

It is important to check the skin every time the leg is washed because entry lesions allow bacteria to enter the skin and this will cause acute attacks. If entry lesions are found, they should be cleaned carefully.

2.3. Wash the leg

(i). Wet the leg with clean water at room temperature. Do **not** use hot water to wash the leg, (ii). Begin soaping at the highest point of swelling (usually around the knee), (iii). Wash down the leg towards the foot, (iv). Gently clean between all skin folds and between the toes, preferably using a small cloth or cotton swab, and paying particular attention to the entry lesions. Brushes should **not** be used as they can damage the skin, (v). Rinse with clean water, (vi). Repeat this careful washing until the rinse water is clean, (vii). Wash the other leg in the same way, even if it looks normal.



Drying

2.4. *Dry the skin*

(i). Pat the area lightly with a clean towel.

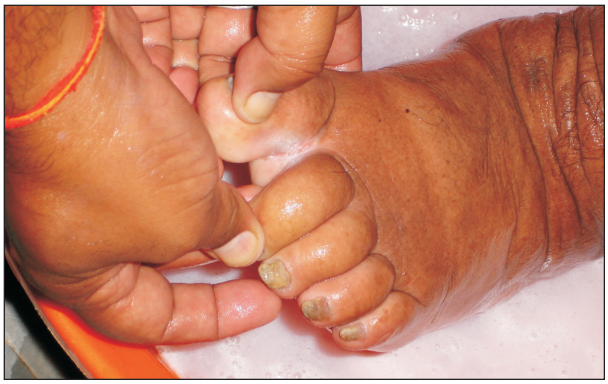
Do **not** rub hard because this can cause damage to the skin, (ii) Carefully dry between the toes and between skin folds using a small cloth, gauze or cotton swab. Wet areas between the toes, skin folds and entry lesions promote bacterial and fungal growth leading to frequent acute attacks.

Washing and drying should be done daily ideally both morning and at night

3. PREVENTION AND CURE OF ENTRY LESIONS

3.1. Entry lesions

are common in patients with lymphoedema and are most frequently found between the toes and deep skin folds and around the toe nails. Entry lesions, such as wounds, can also be found on the surface of the skin. Both fungi and bacteria can cause entry lesions. Fungal infections frequently damage the skin and create entry lesions, especially between the toes, and may cause itching. The entry lesions allow bacteria to enter the body through the skin and this can cause acute attacks. Fungi and bacteria can cause bad odour.



Checking for Lesions

3.2. Fungal infections

are usually white or pink in colour and do not leak fluid. Bacterial infections may leak fluid that is thin and clear or thick and coloured.

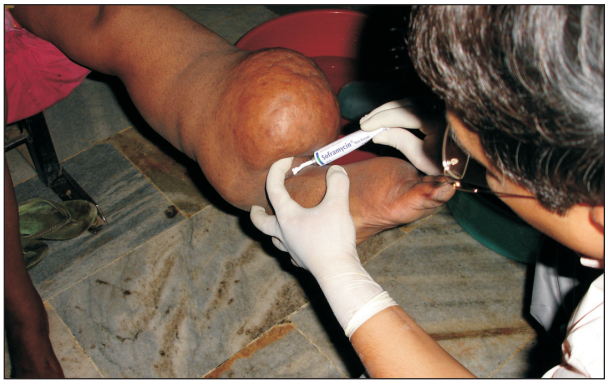
3.3. Antifungal and antibacterial creams

can be used for local application.

4. ELEVATION

4.1. Elevation

is important for patients with lymphoedema of the leg. It helps prevent fluid from accumulating in the leg by improving the flow in the elevated position.



Applying Antifungal/Antibacterial Creams

4.2. The knee

should be slightly bent and a pillow placed under the knee for support.

4.3. While sitting,

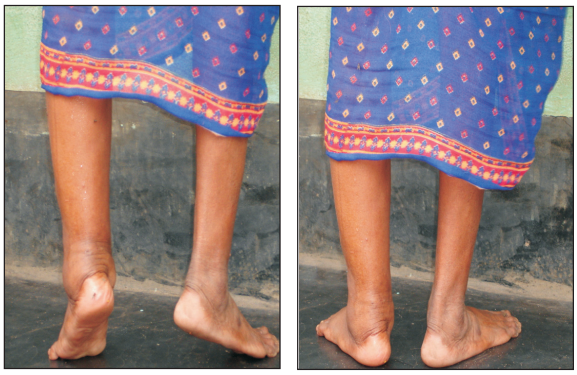
raise the foot as high as is comfortable, preferably as high as the hip. If sitting on the floor, place a small pillow under the knees. If lying down, the foot can be raised by placing a pillow under the mattress.

Patients with heart problems should not elevate their legs unless advised by a doctor

5. EXERCISE

5.1. Exercise

is useful for patients with lymphoedema and in general, the more they exercise the better they are. Exercise helps by pumping the fluid and improving drainage. *However, patients should not exercise during acute attacks.*



Foot Exercise

5.2. Besides walking

short distances, simple exercises can be done.

5.2.1. Standing

(up on the toes exercise): (i) Stand with both feet slightly apart, holding on to a wall, a person or other support, (ii) Raise on to the toes of both feet at the same time and then sink back down to flat feet, (iii) Repeat 5-15 times or as often as comfortable. If the patient is unable to rise on both feet at the same time, the exercise can be done one foot at a time.

5.2.2. Sitting or lying down

(toe point exercise): (i) While sitting or lying down, point toes towards the floor, (ii) Then bend (extend) the toes upwards, (iii) Repeat 5-15 times or as often as comfortable, (iv) Repeat with the other leg.

5.2.3. Sitting or lying down

(circle exercise): (i) While sitting or lying down, move the foot in a circle to the right and to the left, (ii) Repeat with the other leg, (iii) If sitting on the floor, protect the heel with a flat pillow.

6. WEARING PROPER FOOTWEAR

Proper footwear protects feet from injury.

Patients should avoid footwear that makes their feet hot and sweaty, or that are too tight

7. MANAGEMENT OF ACUTE ATTACKS

The reduction in the frequency of the acute attacks is an indication that the patient's condition

is improving. An acute attack is painful. The patient may complain of fever, nausea, headache and soreness of the lymph glands. Most patients can easily care for their acute attack. The patient should rest and elevate the leg comfortably as much as possible at home.

The following simple procedures can alleviate the symptoms:

1. A cloth soaked in water and placed around the leg can relieve pain. The leg can be soaked in bucket of cold water.
2. The leg should be washed with soap and clean water but more gently and carefully.
3. After drying, antiseptic can be applied to the skin and medicated cream.
4. The patient should drink plenty of water
5. Paracetamol can be taken for fever every six hours until the fever lessens.
6. Oral antibiotics can shorten the attack and are recommended.

No exercise during an acute attack as such exercise will be painful. Cold compress will help the patient.

Patients, with any of the signs listed here, should be seen by a doctor: (i) Very high fever, confusion, headache, drowsiness or vomiting, (ii) Fever, shaking, chills, or pain in the leg that does not respond to treatment within 24 hours, (iii) Splitting of the skin because of rapid increase in the size of the leg, (iv) Pus in the area affected by the acute attack.

The lymphoedema of lower limb is classified into three grades as given below:

Grade I lymphoedema: mostly pitting oedema; spontaneously reversible on elevation.

Grade II lymphoedema: mostly non-pitting oedema; not spontaneously reversible on elevation.

Grade III lymphoedema (elephantiasis): gross increase in volume in a Grade II lymphoedema, with dermatosclerosis and papillomatous lesions.

The consolidated data formats to be submitted by the District are as follows:

Proforma: MM- 1

Report on the monthly village-wise / ward-wise lymphoedema Morbidity Management Report for the Month of.....

Name of the Sub-centre/Ward:_____PHC/ Municipality_____

Details	Name of the village / Ward Number									
Name of the Village/ward →										Total
No. of LE cases line- listed										
No. of LE cases trained during this month for MM										
Balance to be trained										
No. trained LE cases following MM										

Note: The report has to be submitted by the Paramedical staff to MO PHC / MHO before 7th of every month
LE= Lymphoedema, MM=Morbidity Management

Proforma: MM- 2

Report on the monthly subcentre-wise / ward-wise lymphoedema Morbidity Management Report for the Month of.....

Name of the PHC/ Municipality_____

Details	Name of Subcentre / Ward Number									
Name of the Village/ward →										Total
No. of LE cases line- listed										
No. of LE cases trained during this month for MM										
Balance to be trained										
No. trained LE cases following MM										

Proforma: MM- 2a

Report on the monthly PHC-wise/Municipality-wise lymphoedema Morbidity Management Report for the Month of:

Name of the District:_____

Details	Name of PHC / ward Number									
Name of the Village/ward →										Total
No. of LE cases line- listed										
No. of LE cases trained during this month for MM										
Balance to be trained										
No. trained LE cases following MM										

Note: The report has to be submitted by the District Health Authorities to State Directorate with copy marked to Dte. of NVBDCP

8. SURGICAL MANAGEMENT OF HYDROCELE DUE TO LYMPHATIC FILARIASIS

Hydrocele is one of the commonest manifestations seen in the endemic districts. Surgical management of hydrocele not only gives great relief to the patients but also augments community compliance for success of ELF in the country.

The first level peripheral health centres (PHCs) will be able to diagnose cases needing surgical intervention, while most of the second level health centres (CHCs) have facilities for undertaking hydrocelectomy. WHO brought out a publication on 'Surgical Approaches to make Urogenital Manifestations of Lymphatic Filariasis' with algorithm for management of scrotal swellings, assessment of needs for conducting hydrocelectomy, etc., which is available on WHO website.

The prevalence of hydrocele manifestations under each CHC is to be obtained and the cases are to be line listed and a time schedule is to be prepared for augmenting surgical facilities, training of surgeons, wherever needed and undertaking hydrocelectomy operations. Besides CHCs, the private sector including NGOs are also to be involved for promoting the surgical intervention for management of hydroceles. The calendar of activities with pragmatic targets and the minimum financial inputs are to be worked out so that the Govt. of India and the State Govt. may be able to consider for allocation of funds for this specific activity. The hydrocelectomy has to be carried out through camps in the institutes like CHCs / Taluk Hospitals / District Hospitals where the trained manpower and facilities are available. The consolidated data formats to be submitted by the State/District are given below and **Annex.4.1.**

Proforma: MM- 3

Report on the monthly Village-wise/Ward-wise Hydrocele cases
Report for the Month of:

Name of the Sub-centre/Ward:_____PHC/Municipality_____

Details	Name of PHC / Ward Number									
Name of the Village/ward →										Total
No. of Hydrocele cases line- listed										
No. ineligible for surgery										
No. of Hydrocele cases operated										
Balance to be operated										

Note: The report has to be submitted by the Paramedical staff to MO PHC / MHO before 7th of every month

Proforma: MM- 4

Report on the monthly PHC-wise/Ward-wise Hydrocele cases
Report for the Month of:

Name of the PHC/Municipality_____

Details	Name of the PHC / Ward Number									
Name of the Village/ward →										Total
No. of Hydrocele cases line- listed										
No. ineligible for surgery										
No. of Hydrocele cases operated										
Balance to be operated										

Note: The report has to be submitted by the PHC / MHO to the District Health Authorities

Proforma: MM- 5

Report on the monthly PHC-wise/Ward-wise Hydrocele cases
Report for Month of:

Name of the District : _____

Details	Name of the PHC / Ward Number									
Name of the Village/ward →										Total
No. of Hydrocele cases line- listed										
No. ineligible for surgery										
No. of Hydrocele cases operated										
Balance to be operated										

To be submitted by District Health Authorities to State Programme Officer with a copy to NVBDCP

Proforma: MM- 6

CHC / TALUK HOSPITALS (TH) / DISTRICT HOSPITALS (DH) INFORMATION FOR SURGICAL FACILITIES FOR HYDROCELE CASES

Report for Month of : _____

S.No.	Name of the Hospital with surgical facilities	No. of surgeons trained	No. of surgeons to be trained

Note: The report has to be submitted by the MO in-charge of CHCs / Municipal Hospitals/ THs / DHs to District Health Authorities

Proforma: MM- 6a

CHC / TALUK HOSPITAL (TH) / DISTRICT HOSPITAL (DH) INFORMATION FOR SURGICAL FACILITIES FOR HYDROCELE CASES

Report For The Month of: _____

Name of the District : _____

S.No.	No. of CHCs with surgical facilities	No. of THs/DHs with surgical facilities	No. of surgeons in CHCs/ THs/DHs	No. of surgeons trained	No. of surgeons to be trained

Note: The report has to be submitted by the District Health Authorities to State Programme Officer with a copy marked to NVBDCP

Proforma: MM- 7

DISTRICT-WISE INFORMATION FOR SURGICAL MANAGEMENT OF HYDROCELE CASES DUE TO LYMPHATIC FILARIASIS

S.No.	Name of district	No. Hospitals (including CHCs) with Surgical facilities	No. of surgeons trained	No. of surgeons to be trained	No. hydrocelectomies conducted

Note: The report has to be submitted by the State Programme Officer to NVBDCP

Annex. 4.1

DISTRICT-WISE INFORMATION OF STATE FOR SURGICAL MANAGEMENT OF HYDROCELE CASES DUE TO LYMPHATIC FILARIASIS

S.No.	Name of district	Population	No. of PHCs	No. of CHCs	No. of CHCs with surgical facilities	No. of surgeons in CHCs

STATE CONSOLIDATED INFORMATION ON HYDROCELE OPERATIONS

S.No.	Name of district	No. of hydrocele operations conducted per annum	No. of surgeons trained on hydrocelectomy at Dist. Hospital/CHCs in district	No. of surgeons requiring training on hydrocelectomy	Dist. Hospital having facilities for conducting training for hydrocelectomy

CHAPTER 5

Behaviour Change Communication for Social Mobilization for ELF

1. NEED FOR BEHAVIOUR CHANGE COMMUNICATION (BCC)

Lymphatic Filariasis is a major public health problem in India. Filariasis causes irreversible chronic manifestations, which result in social stigmatization, disability and immense economic loss. In order to control this disabling disease, India is committed to achieve elimination of lymphatic filariasis by the year 2015 as reflected in the National Health Policy of India in the year 2002. In order to achieve the National Health Policy Goal, a strategy for the elimination of lymphatic filariasis has been in operation since the year 2004. Since then, an Annual National Filaria Day has been observed which includes Mass Drug Administration (MDA) with DEC (diethylcarbamazine citrate) tablets in recommended dosage and morbidity management for alleviation of the sufferings of the patients. However, in this drive, advocacy, inter-sectoral convergence and social mobilization are extremely important to achieve the desired level of compliance in the community and regular care of lymphoedema/hydrocele in patients. Co-administration of DEC+Albendazole has been recommended by the National Task Force in its meeting in 2006.

Information, Education and Communication (IEC) activities are oriented towards increasing awareness among target communities/groups regarding MDA and encourage their participation involving primarily development/distribution of IEC materials and undertaking activities for disseminating information.

Behaviour Change Communication (BCC) is a process of learning that empowers people to take rational and informed decisions through appropriate knowledge; inculcates necessary skills and optimism; facilitates and stimulates pertinent action through changed mindsets and modified behaviour.

The process of BCC involves linkages between advocacy, inter-sectoral collaboration and communication efforts at individual, family and societal levels thereby removing barriers that restrict people from acting, developing enabling environments complemented by requisite service delivery.

2. BCC CAMPAIGN GOAL

Integrated accelerated action through Behaviour Change Communication and delivery of services for informed decision-making, initiation of individual and social change towards elimination of Lymphatic Filariasis by 2015.

3. BCC OBJECTIVES

The specific objectives are as under:

- Enhance awareness regarding source and transmission risk reduction, treatment and availability of services at different levels.
- Promote attitudinal and value changes among target audiences leading to informed decisions, modified behaviour, desirable practices at individual and societal levels.
- Stimulate increased and sustained demand for quality prevention and care services and optimal utilization of available health care services.
- Build support for the programme across inter-sectoral partner organizations, influential sectors of society (corporate sector, political representatives, social activists, media, civil society organizations, etc.) and health care service providers and elicit commitment for action.
- Ensure availability of services.

4. BCC STRATEGY

The BCC campaign is to be undertaken across all levels of programme implementation up to village for individual and social change. For ELF, the campaign needs to focus on:

- Improvement of drugs consumption during the annual Mass Drug Administration at a level of 85% or more in all endemic areas and sustain similar levels during subsequent rounds for at least 5 to 7 years, unless the mf rate comes down to less than 1% and absence of indigenous transmission.
- Improvement in practising home based morbidity management by the lymphoedema patients.

4.1 Important Aspects of BCC Campaign

4.1.1 Catalysts

The process of individual and social change starts with a catalyst/stimulus that may be external or internal to the community. A catalyst represents the trigger that initiates dialogue about a specific issue of concern to the community. Potential catalysts could include internal stimulus (e.g. debility in a person), change agents e.g. National Govt Programmes/community volunteers, Non-Governmental Organizations (NGOs)/Faith Based Organizations (FBOs)/Community Based Organizations (CBOs)/Local Self-Government, Private health care service providers, School children/Teachers, Opinion leaders, Policy makers, Elected representatives, Media, innovation and availability of new technology (e.g. new drugs), policies (e.g. legislations), mass media campaigns (e.g. messages designed to change individual behaviour or promote collective action).

4.1.2 Role of Private Sector

The private health sector represents a substantial resource, especially in urban areas. Private

medical practitioners can also be motivated through the professional organizations. These organizations can also identify areas in which the support of private physicians could best be utilised in mass drug administration and in morbidity (disability) management.

The private sector, industrial houses and private educational institutions are also important groups for organizing mass treatment campaigns for their employees. Large industries provide health services to their employees and their families and sometimes also provide health services to the Industrial Township or rural area where they are located. An inventory of private establishments will enhance planning for drug distribution.

Education department and social welfare department can be potential partners in BCC activities. Messages can be disseminated through students and anganwadi workers.

4.1.3 Role of NGOs, CBOs, FBOs, Panchayats and Village Health & Sanitation Committees

Non-Governmental Organizations (NGOs), Community Based Organisations (CBOs), Faith Based Organisations (FBOs) and village healths sanitation committees can play an important role in LF elimination. These organisations should be invited to discussions when the annual strategic plan is prepared, so that they can identify areas of interest for their participation, which could be incorporated in the national plan. A list of NGOs, CBOs, and FBOs with the possible areas of partnership should be prepared. The possible areas of partnership for an active role of these include social mobilization towards MDA and disability prevention and management.

4.2 Community Dialogue

Social change is most likely to be sustainable if the individuals and communities most affected own the process and content of communication. Community Dialogue as a sequential process or a series of steps can take place within the community, some of them simultaneously, which would lead to the solution of a shared problem. All steps however, may or may not happen in a specific context or case. Broadly, the steps of community dialogue are:

a. *Recognition of a problem:* As a result of a catalyst, someone in the community becomes aware of the problem and starts a discussion among them. For example, an individual [Health Worker/ASHA/Fever Treatment Depot (FTD)/Drug Distribution Centre(DDC)] or a group (NGO/FBO/CBO) discovers and discusses about LF in the area.

b. *Identification and involvement of leaders and stakeholders:* The problem is discussed with family members and/or elders in the community. A health worker or an opinion leader (Opinion leader/Religious leader/Multipurpose Health Worker (MPW)/ASHA/Anganwadi worker/teacher/doctor) may be consulted and members of the community may get together to meet informally to discuss the problem.

c. *Clarification of perceptions:* Discussions may lead to identifying causes for the problem. Dialogue is necessary to create a common understanding. Only after perceptions are clarified and different points of view rectified, the process moves forward regarding how the problem needs to be solved.

d. *Expression of individual and shared needs:* A key element that community programmes need to keep in mind is the involvement of individuals who are the most disadvantaged in the community. Not everyone will experience the problem with the same degree of severity. For example, better-off families with access to quality health care may not face regular health problem or the threat of LF and therefore, may not perceive it to be a problem for their individual families.

e. *Vision of the Future:* This represents an ideal picture of how a community wants to see itself in the future with respect to a problem. It is important that all groups in the community share this vision.

f. *Assessment of Current Status:* This tells the community where they stand in relation to the problem today. Quantification of the problem gives an understanding of the size of the problem. For example, number of LF cases. Qualitative assessment is also necessary to understand the nature of the problem. For example, is there a remedy for LF? What, how and why? Such assessment is important to set goals for action and determine whether any progress is taking place.

g. *Setting Objectives:* Goal setting is the next step. All individuals/community must know the goal and also its achievability, which creates high level of group motivation – a must for people to take sufficient action to solve the problem.

h. *Options for Action:* The kinds of action to be taken to accomplish a health objective with which everyone has agreed need to be defined. This implies identification of resources both inside and outside the community as well as persons or groups that can carry them out. Getting a consensus on action can lead to conflict between interest groups or lack of commitment on the part of some groups. The leadership needs to explore options and evaluate them from the standpoint of conflict occurrence and their resolution.

i. *Consensus on Action:* Once a plan is at hand, a new process of getting consensus among the community needs to take place. The more the community participates and sees the proposed actions as theirs, the more likely they will take action.

j. *Action Plan:* A specific timetable for each activity needs to be developed that will help the community to have clear deadlines and determine who does what and when certain activities need to be taken to accomplish the desired goals.

4.3 Collective Action

The Collective Action involves the process of effectively executing the action plan and the evaluation of its outcomes. The key action steps include:

a. *Assignment of Responsibilities:* To convert a plan into action, specific people must take responsibility to accomplish specific tasks within specified time-period. Leaders must ask volunteers or else assign tasks to individuals/community subgroups. It may be necessary to create community task forces focused on specific goals.

b. ***Mobilization of Organizations:*** Existing organizations within and outside the community could be involved to help. (for example, community volunteers, civil society organizations, schools). Communication through different media is an invaluable resource for mobilizing community support and activity.

c. ***Implementation:*** This includes actual implementation and monitoring of the activities.

d. ***Outcomes:*** This refers to the actual results the community has been able to achieve given the resources, organization and mobilization process specified by the action plan and then carried out.

e. ***Participatory Evaluation:*** Comparison of outcomes with the shared vision and original objectives is an important part of the process. For purposes of group motivation and reward, it is important that most of the community participates in the evaluation of process, so that lessons about what worked and why, could be shared throughout the community.

The four-pronged BCC strategies for ELF are Advocacy, Intersectoral convergence, Programme communication (IEC) and Monitoring & Evaluation. Advocacy, social mobilization and programme communication initiatives begin with baseline situation analysis/research/ identification of target (service takers, service providers) that identifies the levels of current knowledge, attitudes, beliefs, practices, points of resistance, barriers for individual and collective action; approaches to improve same and motivate the target group; effective media options, type of communication, potentials for community participation and inter-sectoral collaboration in addition to ways for scaling up service provision. Regular monitoring and evaluation need to be in place for mid-course corrections.

Procession with Local Leaders

Procession with Students

5. ADVOCACY

Advocacy aims at developing enabling environment by educating the political leaders, elected representatives, planners, organized sectors, professional bodies, media for building support, eliciting commitment and motivating them to be advocates for a particular social development objective; for instance, elimination of LF and other vector borne diseases. Thus, priorities are defined, appropriate policies are framed, sufficient resources are allocated and directions are provided to the implementers thereby facilitating availability and accessibility of resources to community.

6. INTERSECTORAL CONVERGENCE

Intersectoral convergence is a planned process

of bringing together all intersectoral partners and the community to determine felt needs and raise awareness of and demand for certain intervention/s. Intersectoral collaboration is extremely important, as there is a need for propagating that the onus of implementation and acceptance of programme interventions should be shared. This initiative is an integral part of commencing 'community dialogue' and 'collective action'. This would provide uniformity in diagnosis, treatment and monitoring through a wider programme base and to maximize access to appropriate and locally suited measures. Such collaboration is also expected to initiate effective and sustained action towards community mobilization and initiation of behaviour change.

Sensitization Meeting

7. COMMUNICATION

Programme communication through different media (mass media, interpersonal communication) for:

a. strengthening knowledge, beliefs, values, attitudes, confidence,

b. strengthening enabling environment,

c. strengthening reinforcement of knowledge, action through family, peers, teachers, employers, health service providers, community leaders, etc.

Approaches

- Implementing BCC through focused localized on-ground initiatives with supportive umbrella campaign. That is, decentralizing to ensure local relevance and wide reach of information. The Centre will provide leadership and develop core messages for mass media and advocacy events. The states and districts need to base their specific strategies on the core framework and messages, but encourage local adaptation and innovation to reach target groups with appropriate communication tools.
- Tackling issues at a local level and providing support for ELF initiatives in each region. For example, customized solutions need to be created and provided for dealing with local level problems related to MDA and morbidity management. The media route would be focused on local media options using the local language and idiom.
- Providing a steady flow of information through appropriate media mix.
- Focusing communication on key issues and community participation.
- Publicizing achievements and success stories.
- Sustaining a positive message in front of key audiences.

- ➢ Countering negative publicity.
- ➢ Promoting media responsibility through, for example, intensive campaign that would feature "hot spot" prior to MDA. An interface to make information accessible, organize and unify existing resources, establish links to partner organizations, create a forum for partners and allies to exchange ideas, and constitute a rapid response mechanism to broadcast/telecast problems and correct false rumours.
- ➢ Identifying and engaging journalists/media persons covering social sector at different levels of programme implementation.
- ➢ Keeping in mind cultural and gender sensitivity while developing and delivering messages. Addressing specific issues like stigma in case of Lymphatic Filariasis.
- ➢ Targeting women and children as critical audience.
- ➢ Ensuring continuity, which is critical. There is a need to be present continually as a reminder.
- ➢ Assigning higher weights before MDA.
- ➢ Incorporating messages into the story line of popular soaps/serials.
- ➢ In addition to building partnerships with civil society organizations and others, involving professional advertising agencies, who understand the local social and cultural context.
- ➢ Carrying out research.
- ➢ Carrying out monitoring and evaluation.

In general, the following structure is to be followed:

Media	Mass media	Other media
Print	Newspapers, Magazines	Posters, Stickers, Handbills, Hoardings
Electronic	Television, Radio	Video, Audio, Cinema Slides

People Based Media:

Folk Media : Puppet Shows, Song & Drama, Street Play

Other Media : Road shows, Rallies, Exhibitions, Human Chain,

Outreach activities : Peer Education, Group Discussion, Role play

- ➢ **Focused Localized on Ground Campaign through:**
  - o **Interpersonal Communication (IPC)**
    - Interpersonal communication works best when there is one-on-one contact between the health worker and/or health communicator/health educator and the person

whose behaviour is sought to be changed to adopt new knowledge, life skills and practices to ensure the welfare of their families and children.

- One-on-one contact facilitates comprehension of new concepts and demonstration of new practices. Over a period of time, if done consistently, this method can result in adoption of new practices on a sustainable basis.
- The tool kit for interpersonal communication includes aids that enable the communicator/health worker to easily demonstrate any concept through visual aids like manuals, demonstration devices such as role plays as well as such materials as:
    - Flip Books, Flash cards: To be used by volunteers and health workers to counsel audiences during home visits.
    - Stickers: For distribution among school children, shops, and other places to remind people about the core themes on prevention and control of vector borne diseases.
    - Badge, signboards with logo: For identification of those associated with the MDA campaign, such as volunteers and other health workers,
    - Bag with logo: For volunteers/health workers to carry IPC material during door to door visits.
    - Calendars: To promote the anti-filaria messages among influencers, panchayat members, etc. with the key periods highlighted.
    - Mailers, gate folders and wall charts/logo stickers: For civil society organizations, doctors, school teachers, chemists, DDCs/FTDs, community volunteers.
    - Illustrated booklets (predominantly visual) with stories on prevention and control of vector borne diseases especially for children.

o **Folk performances:** The folk performances are important on account of reach, credibility, persuasiveness, ability to adapt performances to the message as well as costs. The focus and venue of the show are to be selected with care, keeping in mind the socio-cultural environment of the area and target audience.

- Scripts of the plays/shows should be sensitive to community, religious and social norms.
- Troupes that are known to the audience of the region should be engaged.
- Training of the performers is a key aspect of communication through folk media. Workshops have to be organized to sensitize them to the nature of the messages, preferably through role plays. Interactive sessions are necessary so as to weave the messages into compelling and entertaining scripts.
- There should be element of interaction between audience and performers. The

performer should elicit feedback from the audience to involve them and also gauge their level of interest and retain attention. Sometimes dummy performers are present in the audience and at the appropriate moment, he/she may be included in the play. Since the show is set in a village ambience and since the performers are familiar with the rural setup, it lends a lot of credibility to the messages being disseminated. In this way, the audience trusts the performers to the extent that they are willing to take their advice on the product/service being advertised. The scripts can be designed to explore every issue of concern like prevention as well as curative steps.

- Successful performances are those whose scripts are flexible and open to on the spot improvisations, to suit local dialects, tastes and preferences.

o *'Melas'* and *'Haats/Bazaars'*

- *Melas* and *Haats/Bazaars* are prominent features of rural life. While *Haats/Bazaars* refer to periodic markets held for trading, *melas* are usually more for either religious or exhibition purpose. Both of these offer large audiences in a short span of time, who are open and more receptive to information as they are in a leisure mode.

- *Haats/Bazaars* are usually held once a week, while some others are held once in two weeks. They are the focal centres of the economic, social and cultural life of villagers.

- *Melas* are held periodically. Over 25,000 *melas* are held annually. However, almost 80% are held for a day in conjunction with a festival and may have limited importance in terms of information dissemination. However, many others last for a week or more. The media Action plan therefore, needs to be drawn accordingly.

- During these events, miking and live demonstration of morbidity management could be arranged.

For localized campaign, emphasis may be given on: Socio-cultural, economic characteristics of the target audience; local language, culture, costumes; featuring local stories, anecdotes and people.

- Miking and intensive interpersonal communication: Wherever feasible, mobile mike announcements shall be made with crisp messages on cause of disease, benefits of MDA, consumption of drugs by all the eligible population, date and timing of MDA, location of booth and timing, etc. The miking shall be done one day before and on the day of MDA. Additionally, intensive interpersonal communication should be encouraged through community at the village level. Information should be given on MDA, booth and side reactions.

VARIOUS IEC PROTOTYPES

Poster 1

NATIONAL FILARIA DAY: 11 NOVEMBER, 2006

Our area is affected by Filaria.
We will take single dose of DEC tablets on National Filaria Day - 11 November, 2006
to save ourselves from Filaria and ensure a healthy and happy future.

Filaria parasite is transmitted by the mosquitoes breeding in pdluted water.
We shall avoid water collection in and around houses
and protect ourselves from mosquito bites by using insecticide treated bed nets.

OUR RESOLVE– FREEDOM FROM FILARIASIS

Directorate of National Vector Borne Disease Control Programme,
Directorate General of Health Services, MOH&FW, Govt. of India

2

Poster 2

NATIONAL FILARIA DAY : 11 NOVEMBER, 2006

We will take single dose of DEC tablets on National Filaria Day - 11 November, 2006
to save ourselves from Filaria and ensure a healthy and happy future.

Filaria parasite is transmitted by the mosquitoes breeding in polluted water.
We shall avoid water collection in and around houses
and protect ourselves from mosquito bites by using insecticide treated bed nets.

OUR RESOLVE – FREEDOM FROM FILARIASIS

Directorate of National Vector Borne Disease Control Programme,
Directorate General of Health Services, MOH&FW, Govt. of India

3

ELEPHANTIASIS IS DREADFUL BUT EASILY PREVENTABLE

Elephantiasis is common in your area

You are at risk of getting elephantiasis

You may look normal; but may have the parasite in your blood.

CONSUME DEC TABLETS ONCE A YEAR
ON NATIONAL FILARIA DAY AND PREVENT FILARIASIS

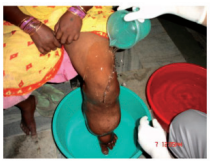
Directorate of National Vector Borne Disease Control Programme
Directorate General of Health Services
Ministry of Health and Family Welfare, Government of India

ELEPHANTIASIS IS DREADFUL BUT EASILY PREVENTABLE

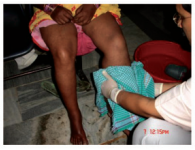
We are Ready to Consume DEC Tablets

- DEC TABLETS:
  - **DISTRIBUTED FREE BY HEALTH WORKERS AT YOUR DOOR STEP**
  - **ALSO AVAILABLE IN HEALTH CENTRES**
  - **EVERYBODY SHOULD CONSUME DEC TABLETS EXCEPT CHILDREN BELOW TWO YEARS, PREGNANT WOMEN AND SERIOUSLY ILL PERSONS.**
  - **SHOULD BE TAKEN AFTER FOOD**
  - **SAFE TO CONSUME**
  - **IF THERE IS INFECTION IN YOUR BLOOD, YOU MAY DEVELOP MILD FEVER, BODY ACHE, NAUSEA , VOMITTING ETC. THESE ARE SELF LIMITING.**

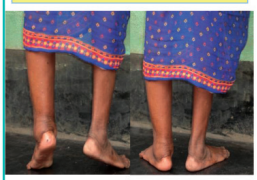
Directorate of National Vector Borne Disease Control Programme,
Directorate General of Health Services, MOH&FW, Govt. of India



Wash your leg daily with water and soap



Dry your leg with Clean cloth



Do exercise by rising up & down on toes

MORBIDITY MANAGEMENT

If you have lymphoedema/ elephantiasis these are the simple things you should do:

- Wash your legs and skin folds with soap & water
- Dry it with clean cloth.
- Put anti bacterial or anti fungal ointment locally, if required.
- Keep your leg(s) in raised position while sitting or sleeping.
- Exercise anytime, anywhere convenient. Raise your toes up and down, rotate your foot from the ankle clockwise and anticlockwise.
- Walking is a good exercise.

Please Note:

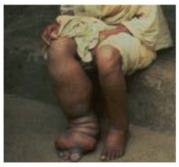
- Don't do the exercise if you have high fever and acute infection as it will be painful.
- If you are a heart patient consult your doctor before doing the exercise and elevating your feet.

For more information visit your nearest health centre

63

Gateway Folder 1

ELIMINATION OF LYMPHATIC FILARIASIS



MASS DRUG ADMINISTRATION ON NATIONAL FILARIA DAY 11th November, 2006

NVBDCP

DIRECTORATE OF NATIONAL VECTOR BORNE DISEASE CONTROL PROGRAMME 22,SHAMNATH MARG DELHI – 110 054

OUR RESOLVE

FREEDOM FROM FILARIASIS

National Filaria Day

MASS DRUG ADMINISTRATION

What is Lymphatic Filariasis?

•Lymphatic Filariasis is a mosquito borne parasitic disease commonly known as Elephantiasis or Haathi Paon.

•The Parasite is thread like worm which lives in lymphatic. The infection causes lymph damage and dysfunction.

How is it spread?

•It is spread through mosquito bites.

•The adult worms produce millions of baby worms (microfilariae), into blood stream of affected person.

•While taking blood meal, mosquitoes pick up microfilarae and transmit to healthy persons.

What is symptom of Filariasis?

•Periodic fever or no symptoms are recognized during initial period of infection.

•Fever recurs after many years of infection and.

•The frequency of acute attacks of fever and pain, swelling of legs increase over the years, leading to elephantiasis if proper morbidity management is not practiced.

What is Mass Drug Administration (MDA)?

MDA with annual single dose of Diethylcarbamazine citrate (DEC) tablets is recommended for elimination of lymphatic filariasis in the affected areas.

Who should take DEC tablets?

Everyone living in filariasis affected area, even if apparently healthy should take a single dose of DEC tablets.

However, the following groups should not be given the medicine :

•Children below two years of age,

•Pregnant women, &

•Seriously ill persons.

How often DEC tablets are to be taken?

DEC tablets are to be taken once a year during Mass Drug Administration campaign for 5-7 years consecutively.

DEC tablet should be taken as indicated below:

2-5 years	1 tablet of 100 mg
6-14 years	2 tablets of 100 mg
15 years & above	3 tablets of 100 mg

Where DEC tablets would be available?

DEC tablets will be distributed free of cost by health workers or volunteers through house to house visits and booths/camps at schools, work places, health facilities, town centers, etc. during MDA campaign on National Filaria Day on November 11 2006.

How to take the DEC tablets?

DEC tablets should be taken with a glass of water. **DEC TABLETS SHOULD NOT BE TAKEN ON EMPTY STOMACH.**

Are there any side effects from the medicine?

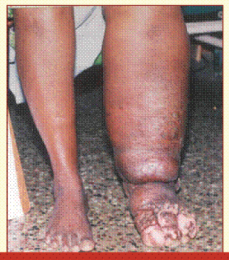
Persons having microfilaria in their blood, may experience body ache, vomiting, headache, dizziness, fever, rash, itchiness after intake of DEC due to its killing effect on microfilaria. These symptoms are temporary and usually disappear within a day. In case, the symptoms persist, health worker/ health centre should be immediately contacted.

Why should DEC tablets be taken on National Filaria Day?

To ensure healthy future free from filariasis for the children and community, annual single dose of DEC tablets should be taken for 5-7 consecutive years.

64

Towards --- Freedom from Filariasis



How to prevent--- Enlargement of Elephantoid Leg---

On National Filaria Day surely take a dose of DEC

This drug will be distributed free in your area

For more information

Contact your nearest health Centre

OUR RESOLVE : FREEDOM FROM FILARIASIS

Directorate of National Vector Borne Disease Control Programme,
Directorate General of Health Services, MOH&FW, Govt. of India

FILARIA MESSAGES

आओ मिलकर हाथी पॉव से पाऍं छुटकारा।
डी.ई.सी. दवा खाकर तुम दो साथ हमारा।।
डी.ई.सी. दवा का देखो जादू।
फाइलेरिया पर पाओ काबू।।
डी.ई.सी. दवा खाने से पाओ निदान।
वरना हाथी पॉव से तुम हो जाओगे परेशान।।
हाथी पॉव से पाओ छुटकारा।
डी.ई.सी. दवा खाकर दो साथ हमारा।।
डी.ई.सी. दवा खाओ, यह है नारा हमारा।
तभी तो हाथी पॉव से तुम पाओगे छुटकारा।।
डी.ई.सी. दवा खाना सभी।
हाथी पॉव से बचोगे तभी।।
हाथी पॉव से सबको है बचाना यह ध्यय है हमारा।
डी.ई.सी. दवा खाकर तुम़ हमको दो सहारा।।

.....

सुनो रे भाईयों,
सुनो री सखियों,
फाइलेरिया से बचो अब तुम।
डी.ई.सी. दवा के देखो गुण।।
उल्टी, सिरदर्द, बुखार परेशानी सताऍं।
आशा तुम सबको यह बतालाऍं।।
इस परेशानी से मत घबराना।
डी.ई.सी. दवा खाते जाना।।
सखियों सुनो–सुनो तुम एक कहानी
हाथी पॉव पर अब विजय है पानी
डी.ई.सी. दवा जो खा लो तुम
स्वस्थ शरीर पाओगे तुम।।
हाथ से हाथ मिलाते चलो
डी.ई.सी. दवा खिलाते चलो।।
वरना हाथी पॉव से तुम होगे परेशान।
फिर न पाओगे कोई निदान।।

.....

सखियों सुनो–सुनो तुम एक कहानी
हाथी पॉव पर अब विजय है पानी
डी.ई.सी. दवा जो नियमित खायेगा
पूरा जीवन स्वस्थ वह रहे पायेगा।।
जो जो डी.ई.सी. दवा नियमित खाता है।
वही पूर्ण उपचार पाता है।।
हम अग्रेंजी में फाइलेरिया व हिंदी में हाथी पॉव कहते है।।
इस के इलाज में जो डी.ई.सी दवा खाते है, वो निरोग
होकर चैन से जी पाते है।।
डी.ई.सी दवा खाते जाओ हमारा साथ निभाते जाओ
आस–पास कोई मरीज हो तो आकर हमे बतलाओ
उसके नवजीवन के लिए डी.ई.सी दवा लेकर जाओ
नियम पूर्वक उसको खिलाओ, उसके ारीर को स्वस्थ
बनाओ।
भारत सरकार ने फाईलेरिया/हाथी पॉव को जड़ से
मिटाने की कसम खाई है।
बचाव हेतु डी.ई.सी दवा आपको स्वस्थ रखने हेतु बनाई
है।।
भाईयों जिसने–जिसने भी यह दवा खाई उसने ही
निरोगी काया पाई है।।

मुफ्त डी.ई.सी. मिलेगी तुमको
खाली पेट खाना मत इसको
पॉच साल से नीचे को दें एक गोली
छः से चौदह खाँए दो गोली, और पन्द्रह के ऊपर की
{टोली} तीन गोली खाना हमजोली।।
घर–घर बाँटे मुफ्त दवा
खाओ इसे तो न पाओ सज़ा
विकलागंता से बचने के लिए करो सोच विचार
फाइलेरिया की बीमारी के है कई उपचारः

पानी साबुन से करो धुलाई

फिर साफ कपड़े से पोंछ लेना भाई
करना थोड़ा तुम व्यायाम
तब पाओगे बहुत आराम
पैर ऊपर उठा कर रखो
प्रतिदिन दवा लेप लगाकर रखो
फटे घाव को मत खुजलाओ
संक्रमण को दूर भगाओ
संदेश यह भी फैलाना हमारा
डी.ई.सी. करे फाइलेरिया छुटकारा।।
हो अगर तुम स्वस्थ रे भईया
फाइलेरिया के परजीवी की दूर करो रे छईया
रात में खून की जॉच अवश्य करवाए।
तभी तो सब फाइलेरिया से मुक्ति पाए।।
अगर डी.ई.सी. का सेवन करोगे सभी
आने वाले वंशों को फाइलेरिया से मुक्त रखोगे तभी
भाई बहिन सुनो रे बाबा
सबको यह संदेश सुनाना
डी.ई.सी. गोली सभी को खिलाना
और फाइलेरिया से मुक्ति पाना

औरत मर्द सुनो रे सभी
डी.ई.सी. की गोली खाना तुम सभी
वरना देखोगे दु परिणाम
हाथी पाँव होने पर रूक जाएगें सब काम
कौड़ी बढ़े तो वंश थम जाए
और बिना शादी बिटिया दुख पा
हाथ से हाथ मिलाते चलो
डी.ई.सी. की गोली खिलाते चलो

डी.ई.सी. दवा खा ले भईया
फाईलेरिया की दूर रखो तुम छईयाँ

उल्टी पेटदर्द मितली सताए
डाक्टर तुमको अधिक समझाए
डी.ई.सी. के सेवन से कीड़े मरते हैं
तभी यह लक्ष्ण दिखते हैं
ताप दो दिन से अधिक हो जाना
जॉच केन्द्र तुम जल्दी जाना और बिल्कुल न तुम घबराना
क्योंकि फाइलेरिया से छुटकारा जो है पाना
क्षणिक जटिलता में फँस जाओ तुम
चिकित्सीय सुविधा पाओगे तुम
घर–घर बॉटे मुफ्त दवाई
इसे अवश्य खा लेना भाई
ताप अगर न कम हो पाएं
डाक्टर पास तुरन्त ही जाएं
और तनिक न घबराएं
फाइलेरिया रोकथाम में सहयोग बढांए

स्वास्थ्य कर्मी द्वारा पूछे जाने वाले प्रश्नः

क्या आपके आस–पड़ोस में किसी के हाथ–पाँव में फोटो जैसी सूजन है?
क्या किसी को इस प्रकार की सूजन में दर्द होता है?
क्या किसी पुरूष के कौड़ी (फोते) सूजे हैं?
क्या किसी व्यक्ति के सूजे अंगों में लालपन है या
बार–बार बुखार आता है।

CHAPTER 6

Monitoring & Evaluation of Impact of Programme

Monitoring & Evaluation of the programme is an inbuilt component to assess the impact of the programme as well as to take evidence based decision to withdraw MDA. Epidemiological evaluation focusing on the infection will be useful. For epidemiological evaluation, parasitological surveys in human population before and after the intervention covering certain proportion of population have to be carried out in selected villages / wards. Distribution of filariasis is known to be clustered and therefore selection of villages for impact assessment should cover representative samples from different clusters within a given district. Sentinel sites (fixed) and random sites (spot check) are to be selected as per the guidelines given below:

The decision to stop MDA should be based not just on the number of MDA rounds completed but on careful monitoring and strong evidence for cessation of transmission. The objective of MDA is to interrupt transmission by reducing the level of microfilaraemia in infected individuals to such an extent that the potential for transmission is reduced to levels where no new transmission could occur.

1. APPROACH

Impact evaluation to verify absence of transmission can be done by assessing the infection in children who are born after the introduction of intervention. Before examining this, the reduction in mf prevalence can be verified and when it reaches below 1% prevalence, absence of transmission can be checked. The steps involved in epidemiological evaluation include:

Step 1: Collect baseline data from sentinel sites (three villages and one ward) with equal number of spot check sites

Step 2: Repeat microfilaraemia survey in the sentinel sites prior to subsequent round of MDA and in equal number of spot check sites selected newly every survey.

Step 3: Before fifth round of MDA, screen all children in the age class 2-4 years for antigenaemia in addition to community mf survey covering the sample size as given in Step- 5 & 6.

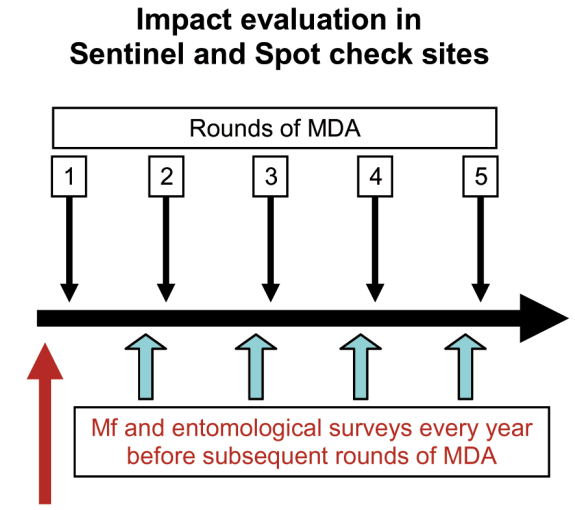
Step 4: If mf prevalence in sentinel and spot check sites reaches below 1% and antigenaemia testing of children shows no positive, sample 8-10 additional sites of presumed high risk for continued transmission. Repeat mf survey at community level and antigenaemia survey among children 2-4 years old covering the sample size as given in Step- 5 & 6.

Step 5: If mf prevalence shows below 1% and no antigenaemia prevalence among children, select 30 clusters (village/ward) randomly in the district and examine 10 children in the age class 2-4 years for antigenaemia.

Step 6: If none of the 300 children show positive for antigenaemia, then screen 3000 school entrants (5 year old children) by Lot Quality Assurance Sampling method. The survey has to be continued till antigenaemia positive is detected or reach the target of 3000 children,

When none of the 3000 children show positive for antigenaemia, the MDA can be stopped.

Impact evaluation in
Sentinel and Spot check sites



2. SELECTION OF SITES [SENTINEL (FIXED) AND SPOT CHECK (RANDOM)]

2.1 Sentinel (Fixed) Sites

- Make a list of all PHCs in the district
- Select 3 PHCs with the highest number of lymphoedema and hydrocele cases detected during morbidity survey.
- Select one subcentre each from the above three PHCs with the highest number of cases.
- Select one village each from the 3 subcentres with highest number of lymphoedema and hydrocele cases.
- In urban areas, select one municipality with highest number of lymphoedema and hydrocele cases and select one ward with highest number of lymphoedema and hydrocele cases from the selected municipality.

The 3 villages and one ward selected above will be the sentinel sites (fixed) for 5 years or as long as MDA is implemented.

2.2 Spot check (Random) Sites

- Select 3 PHCs randomly from the list of PHCs irrespective of number of lymphoedema and hydrocele cases.
- Select one subcentre randomly from each of the 3 PHCs.
- Select one village **each** from the three subcentres on a random basis.
- For urban areas, select **one** municipality from which select one ward randomly.

The 3 villages and 1 ward selected randomly are spot check sites, which are to be changed every year following the above method.

3. COLLECTION OF BLOOD SMEARS FOR MICROFILARAEMIA

Select the sites with more than 500 population so as to enable to collect at least 500 blood smears and thus a minimum 4,000 blood smears from 4 sentinel and 4 random sites should be collected.

3.1 Inform Community at Large and seek their Cooperation

- Visit the selected villages a few days before the date fixed for collection of blood smears.
- Identify key village leaders and extension workers of other government departments working in the village or volunteers such as ASHA/DDC/FTD or Anganwadi worker or local NGOs and inform them about the purpose of the blood smear collection and the date and time of the next visit. Seek their cooperation in informing the community and in the collection of the blood smears.
- Visit the identified patients with lymphoedema and hydrocele in the village and inform them about morbidity management and hydrocelectomy.
- Make arrangements for night halt in the village.

3.2 Collection of Blood Smears

- Collect blood smears between 8.30 *pm* and 12 midnight.
- Cover all households in the village / ward so that a minimum of 500 blood smears are collected.
- Cover all the individuals in the household, except children under two years of age.
- Record the name, age and address of the person in a register in serial order with a serial number (Annex 6.1). The number should be noted on the slide with glass marking pencil at one edge of the slide. If there is more than one team working in the village,

REMEMBER

- Blood smears should be collected at night after 8.30 *p.m.* Seek community participation by informing them in advance.
- Blood smears can be collected by laboratory technicians from NFCP survey teams and NFCP control units and other paramedical personnel.
- Make necessary arrangements to transport the slides to the laboratory next morning. If blood smears are made by laboratory technicians, these can be dehaemogolobibised, fixed in acid-alcohol and stained in the field and examined in the laboratory after return of the survey team.
- Make a time schedule and ensure adequate supply of the items needed for the preparation of the blood smears well in time.
- 3000 or more blood smears from the rural areas and 1000 or more blood smears from the urban areas are expected from each district, every year before MDA.
- about 53 to 55 man-days will be required for the staining and examination of these smears at the rate of 75 slides per person per day i.e. one technician will need over two months to examine these smears. The period can be shortened by assigning more technicians.

prefix A or B or C..... to the slide number of each team. If the survey is conducted in a village for more than one night, the slide number for the subsequent nights will be given serially after the last slide number of the preceding night blood smear (for example if Team A collects 52 blood smears on the first night, the slide numbers will be A1, A2,.....A52 and the second night blood survey slides of the same team will start from A53, A54, ... and so on)

- Make sure that the smear is dried flat before putting the slide in the slide box.

3.3 Instruction for Examination of Blood Smears

Next day, the slide number should be marked in the centre of the smear with lead pencil .The blood smears should be dehaemoglobinised within 24 hours of collection and fixed in acid-alcohol (2 parts of con. HCl + 98 parts of methyl alcohol). If there is delay in dehaemoglobinisation of blood smears, the blood smears may get auto-fixed and microscopic examination will be difficult in the detection of mf. The dehaemoglobinised blood smears are stained in JBB-1 for 40-60 seconds, washed in buffer or distilled water, dried and examined under low power of compound Microscope. The entire blood smear is to be examined systematically from one end to the other end. The species of mf is confirmed under oil immersion lens.

3.4 Calculation of Parasitological Indices

$$\text{Microfilaria rate (\%)}: \quad \frac{\text{No. of slides +ve for mf}}{\text{Total number of slides examined}} \times 100$$

Average mf density:
(Mean no. mf. /20 cmm blood)

$$\frac{\text{Total number of microfilariae}}{\text{No. of +ve blood smears}}$$

Disease Rate (%):

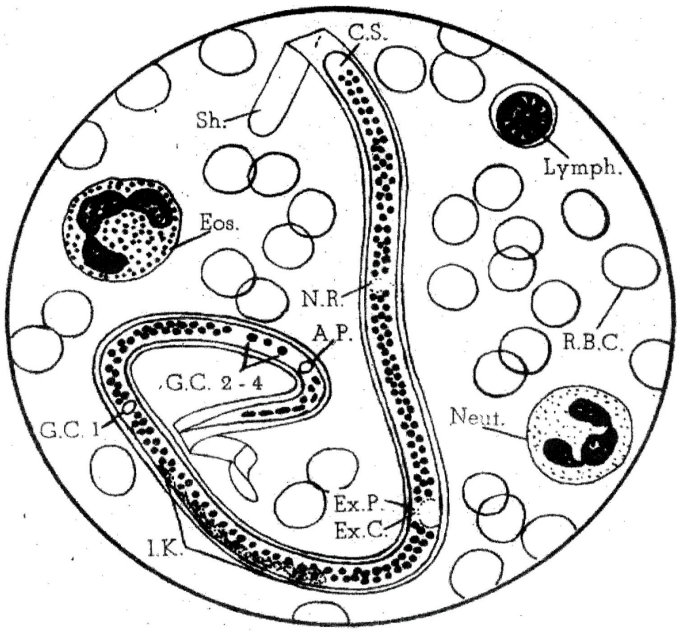
$$\frac{\text{No. of persons +ve for disease}}{\text{Total number of persons examined}} \times 100$$

Record the names and addresses of patients of lymphoedema and hydrocele for follow-up regarding morbidity management and hydrocelectomy in case of the latter, if required.

3.5 Cross-checking of Blood Smears

- All positive slides should be sent to the office of the Regional Director of ROH&FW for cross checking.
- 10% of the negative slides should be sent to the state level laboratory, which will send 2% of these slides to the office of the Regional Director of ROH&FW and examine the remaining 8%.

Form for Filaria night blood survey is given in *Annex 6.1 and* compilation of data for sentinel and random (spot check) sites is given in Table-2 at *Annex 3.2 of Chapter 3.*



Microfilaria of *Wuchereria bancrofti* seen under oil immersion lens of Compound Microscope

Sh: Sheath, C.S.: Cephalic Space, N.R.: Nerve Ring, Ex.P.: Excretory Pore, Ex. C.: Excretory Cell, I.K.: Innenkorper, G.C. I & G.C. 2-4: G Cells (so-called "genital cells"), A.P.: Anal Pore, R.B.C.: Red Blood Cells, Neut.: Neutrophil, Eos.: Eosinophil, Lymph: Lymphocytes

4. ENTOMOLOGICAL DATA COLLECTION

From each sentinel and spot check site, entomological data collection should be made from 10 catching stations spending 15 minutes in each catching station using flash light and aspirator tube in the early morning between 6 *a.m.* and 10 *a.m*. All the female *Culex quinquefasciatus* shall be dissected to find out the filarial infection. The following entomological parameters are to be calculated for each selected village/ward.

From each site, minimum three collections at an interval of 10 days shall be carried out before each round of MDA

4.1 Calculation of Entomological Indices:

Ten Man-hour Vector density:

$$\frac{\text{No. of female } \textit{C. quinquefasciatus} \text{ collected}}{\text{No. of man-hours spent for mosquito collection}} \times 10$$

Infection rate (%):

$$\frac{\text{No. of mosquitoes +ve for any stage (L1/L2/L3 stages) of the parasite}}{\text{No. of female vector mosquitoes dissected}} \times 100$$

Infectivity rate (%): :

$$\frac{\text{No. of mosquitoes +ve for infective larvae (L3)}}{\text{No. of female vector mosquitoes dissected}} \times 100$$

Mean number of L3/ infective mosquito:

$$\frac{\text{No. of infective larvae (L3) found}}{\text{No. of infective mosquitoes}}$$

L1: Stage 1 larva or sausage stage larva
L2: Stage 2 larva or pre-infective stage larva
L3: Stage 3 larva or infective stage larva

5. IMPORTANT QUESTIONS FOR MONITORING & EVALUATION

5.1 What is Implementation Unit (IU)?

It is an administrative unit in a country for which decision has been made to administer drugs to entire eligible population. In India, the Implementation Unit is a district. However, if some districts are showing different ecogeography and some part is suspected to be free from LF, it should be surveyed for LF cases followed by mf survey before it is brought under MDA or excluded from MDA.

5.2 What should be monitored?

The selective monitoring of a few critical aspects of the programme is generally sufficient and cost effective. While assessing interruption of transmission, it is most important to consider the following aspects:

i The number of people who have ingested the drugs; and

ii The impact of MDA on prevalence of microfilaraemia

5.3 What information is required on LF status in IU?

The State Programme managers should categorize IUs into one of the three categories described below:

i Endemic (Red): IUs where the average native population has an infection (mf) rate of 1% or more;

ii Non-endemic (Green): IUs where either the ecological situation is not conducive to transmission, e.g. altitude above 1600 metres MSL, dry arid area, or where previous surveys have indicated an infection (mf) rate below 1%; and

iii Uncertain (Grey): IUs where the LF status is still undetermined and where further surveys are required to assess the infection rate.

5.4 How to assess the endemicity of LF in the IU?

Assessment of endemicity requires two steps:

i Assess how widespread the disease in the IU. This can be ascertained through reviewing:

a. historical data;
b. unpublished and published data on filariasis;
c. report of medical and health services at the district level
d. hospital record on hydrocelectomy;
e. the existence and use of local names for the terms like hydrocele and lymphoedema and
f. the review would make it possible to distinguish those areas in which LF is likely to be endemic and which require further investigation.

ii Microfilaraemia survey by taking night blood slides from the targeted population.

5.5 What do you understand by the population at risk in the IU?

The area where indigenous transmission of microfilaria is established is known as filaria endemic and the population living in the area is at risk. When MDA was launched country-wide in 2004, the district as a whole was taken as the implementation unit for MDA. Any new district or part of district if suspected to be filaria endemic, the night blood microfilaraemia surveys are to be conducted and if Mf prevalence rate is found $\geq$1%, it should be considered for MDA and the population covered under area of IU should be considered as population at risk. If part of district is considered as population at risk, there should be significant data to prove other area as non-endemic.

5.6 What is eligible population in the IU for MDA?

The entire population above two years of age is eligible population for MDA. However pregnant women and severely ill persons should be excluded from the programme of MDA besides children below 2 years of age.

5.7 What are impact monitoring indicators of MDA on microfilaraemia*?*

For effective monitoring of impact, the following need to be considered:

i Choice of diagnosis tool; and

ii Sampling and frequency of measurement

A number of diagnostic tools are currently available for monitoring the impact of MDA. They are as follows:

i Night blood films for microfilaraemia;

ii *Wuchereria bancrofti* antigen detection tests that can be done any time of the day;

iii *Filaria antibody detection tests; and*

iv *Polymerase Chain Reaction (PCR) techniques in humans and mosquitoes for detection of filarial infection*.

The night blood films for microfilaraemia and the antigen detection test have been standardized and are currently recommended for use in the programme globally. The other diagnostic tests are still being standardized and assessed for their interpretation in the field.

The national guidelines should be followed for the national programme to have uniform monitoring.

5.8 What are the limitations of the antigen detection tests?

i The antigen test is currently available for *W. bancrofti* only.

ii It measures the presence of adult worm antigen; therefore, it can be a useful tool to identify IUs with filarial infection in the community during the initial assessment phase.

iii It is not very effective for measuring the impact of MDA on microfilaraemia as the test may still be positive despite a significant reduction in levels of microfilaraemia.

iv However, it can also be used to look for new infection in children born after the start of MDA.

Keeping in view of limitations of antigen detection tests, the standard night blood film examination remains the recommended diagnostic tool to assess the impact of MDA on microfilaraemia.

5.9 How frequently the impact monitoring should be carried out?

It should be carried out before each round of MDA for examining the trend. (However, it would be sufficient to carry out before first, third and fifth rounds of MDA, then every two years to make decision to withdraw MDA). Ideally when the frequency of health event is measured, it should be representative of the geographical area. The ideal sample size for measuring microfilaraemia levels of 1% or less, with a reasonable margin of error, would require testing of large number of individuals. The alternative way of assessing the impact of MDA is through sentinel sites. Since these sites are known to health workers responsible for implementing MDA in the area, bias could occur. To avoid this, spot check sites also need to be identified.

5.10 How many sentinel and spot check sites are needed for each implementation unit?

As per operational guidelines, 4 sentinel sites (three villages from rural areas and 1 ward from urban area) should be identified on the basis of prevalence of higher number of disease cases from each IU which will remain fixed for the IU till the goal of MDA is achieved. Similarly 4 spot check sites (three villages from rural areas and 1 ward from urban area) should be identified randomly irrespective of prevalence of disease cases from each area. Each site should have population over 500 and if it is less than that, the neighbouring area or hamlets may be included.

5.11 How useful are sentinel sites in measurement of prevalence of lymphoedema and hydrocele?

The presence of clinical cases of lymphoedema and hydrocele should be recorded in all sentinel sites. Apart from assessing the trend in prevalence of lymphoedema and hydrocele in the sentinel sites over the period of programme implementation, this information would also give an indication of the disease burden in the IU.

5.12 What are the criteria of WHO for stopping MDA?

It has also been briefly described in the beginning of this chapter. The following steps are considered in deciding when to stop MDA:

Step (i):

- Test all age groups in the sentinel sites and spot check sites for mf prevalence and mf density, before first round, third and fifth round of MDA. Before fifth round of MDA, test the children aged 2-4 years for antigenaemia with ICT cards.
- If mf prevalence rate in the sentinel and spot check sites is below 1% and no child aged 2-4 years is positive for antigenaemia using ICT cards, the criteria have been met and so proceed to Step (ii) after completing 5th round. But if the criteria have not been met, continue MDA and repeat Step (i) before round 7.

Step (ii):

- Select 10 additional sites presumed to present a high risk of continued transmission. If mf prevalence rate in all these sties is below 1% and no child aged 2-4 years is positive for antigenaemia using ICT cards, the criteria have been met and so proceed to Step (iii), following 5th round of MDA. But if criteria have not been met, continue MDA and repeat step (i) before 7th round.

Step (iii):

- Conduct a small community ICT survey of 300 children of 2-4 years of age in 30 high risk areas; 30 cluster Lot Quality Assurance Sampling (LQAS). From each cluster, sample 10 children at random. If no positive found, proceed to step (iv). If any positive is found, continue MDA and repeat Step (i) before round 7th.

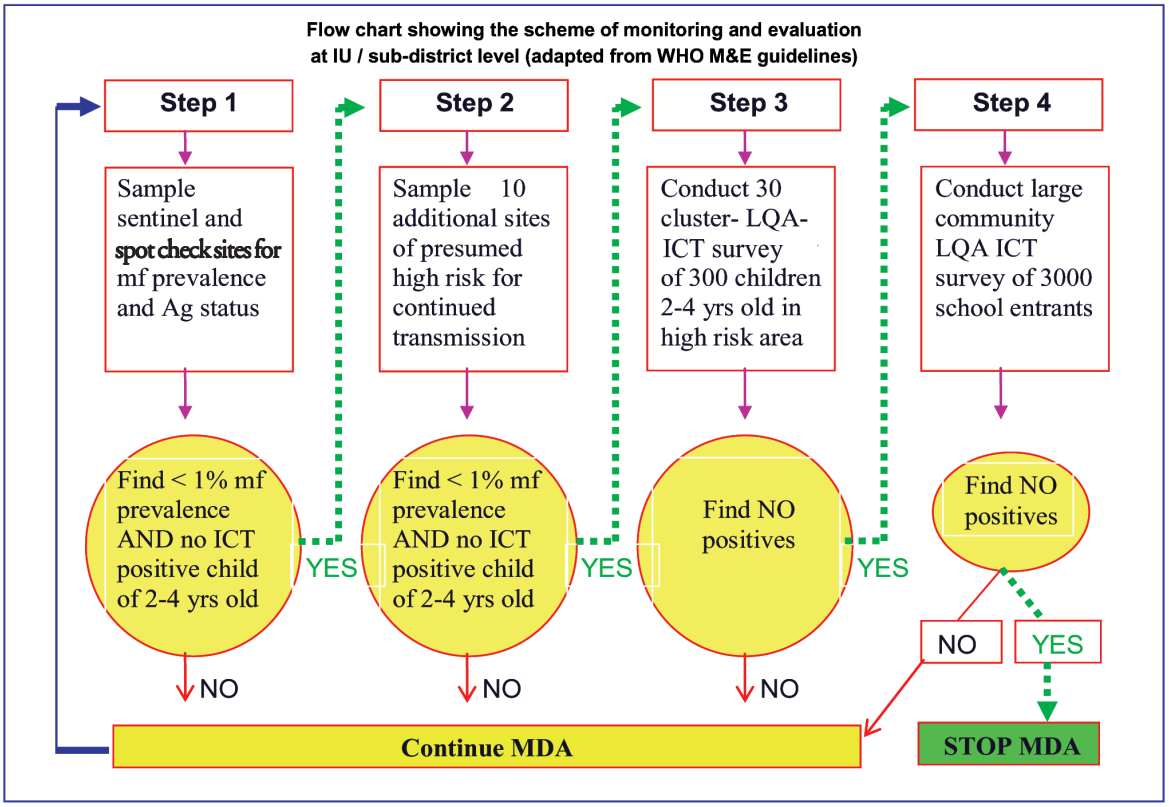
Step (iv):

o Conduct a large community ICT survey of 3000 school entrants using LQAS. Has any true positive been found? If yes, repeat Step (i). If no, stop further round.

5.13 What is Lot Quality Assurance Sampling?

It is a sampling technique in which a sample of 30 clusters of 10 children each is chosen from the highest risk areas. In the individuals cluster, one household in chosen at random and the oldest child in the appropriate age range is selected from that household (or from next household if there are no children in the first) and tested using ICT. If the selected child is absent from the household, the second oldest child is selected, but note is taken of the absentees. In case the proportion of absentees becomes high enough to warrant revisiting households or necessitates some other procedure to minimize absentees bias, successive households are selected unless 10 children in the appropriate age range have been tested. The selection of only one household is proposed here to minimize the known effect of clustering in families.

Conduct LQAS of ICT positivity of 3000 school children entrants covering the entire implementation area or areas being assessed. If no true positive case is found, stop MDA. If true positives are found, conduct 5th and 6th rounds and repeat the LQAS school survey as described



above before 7th round. If no true positives are found, stop MDA.

Annex 6.1

FILARIA NIGHT BLOOD SURVEY FORM

PHC:_____ Village:_____

Date of screening:_____

Sl. No.	Name of Person	Name of Head of House hold	Door number	Age	Sex	Disease affected part					Time of starting of disfigure-ment	Period of stay in district	Blood smear	
						Leg	Hand	Scrotum	Breast	Others			Id No.	Result (Mf count)
1														
2														
3														
4														
5														
6														
7														
8														
9														

Date of examination of blood smear:

Signature
(Name of the technician)

CHAPTER 7

Independent Assessment of MDA Implementaion

1. INTRODUCTION

Monitoring of implementation is an inbuilt component of the programme (13 capture formats given in Annex-3.2 in Chapter 3). It has been observed in the past that actual drug consumption was lower than the reported coverage by peripheral health workers/volunteers. As per the norm, the drugs are to be consumed by the eligible population in the presence of drug administrators but on many occasions, the drug was handed over to the family members for consumption later on. It has been observed that a substantial proportion of community members do not consume the drug. Therefore, it is important that the mid-term assessment shall be conducted by independent team members who are not directly connected with MDA programme in the selected area. The assessment shall be completed within 2 to 3 weeks of MDA so that the community will be able to recall the events without memory lapse. Assessment of programme implementation will be useful to make mid-term corrections as well as strengthening the ongoing programme. All the MDA districts are included for the assessment.

2. OBJECTIVES

(i) To review the progress of activities of single dose DEC or co-administration of DEC + Albondazole in the selected districts.

(ii) To make independent assessment of the programme implementation with respect to process and outcome indicators.

(iii) To recommend mid-course corrections and suggest necessary steps for further course of action.

3. CONSTITUTION OF ASSESSMENT TEAMS

Team should be identified from the medical colleges/research institutes like National Institue of Malaria Research and other ICMR institutions not directly connected to MDA.

A three member independent Assessment Team will be constituted for the selected endemic State/UT by Directorate of NVBDCP for Mid-Term Appraisal of MDA from the identified institutions.

4. ASSESSMENT OF ACTIVITIES

(iv) Central level (NVBDCP/NCDC/ICMR) regarding logistics, funds, trainers' training, etc

(v) Regional level (ROH&FW) regarding training, co-ordination for MDA activities, etc.

(vi) State level (20 States/UTs) Macro planning, training of district level officers through Medical Colleges, advocacy, flow of funds & supplies, etc.

(vii) Medical Colleges: Training of District level officers, advocacy, monitoring of side effects of drugs in selected districts, selection of sentinel and random (spot check) sites for baseline/impact data, independent assessment.

(viii) District level (all MDA districts in each State/UT) planning, funds and logistics flow, training, DCC activities, implementation, supervision, rapid response teams and assessment

(ix) PHC level (3 PHCs in each selected district) planning, logistics, training, implementation and supervision

(x) Urban level (one ward of the identified town) planning, logistics, training, implementation and supervision

(xi) Peripheral level (A cluster of 30 households in one village in each of the 3 selected subcentres and one ward in a town)

5. SELECTION PROCESS IN THE DISTRICTS

Four clusters (each cluster having 30 households) are to be selected comprising urban and rural areas.

- Classify the PHCs low, medium and high on the basis of drug distribution coverage
- From each category, select one PHC at random
- From each PHC, select one village at random
- Select one ward from medium coverage town
- Select 30 household cluster in each village/ward
- From each cluster of 30 households, information pertaining to all inmates of the household to be collected.

On an average, 30 households may contain 150 or more inmates. The four cluster survey may indicate information for 600 or more household members.

However, in the districts where the urban population is more than the rural population, the distribution of the four clusters may be modified according to the proportion of urban to rural population. For example, in Puducherry, the urban population is about 60% and hence two urban clusters and two rural clusters are to be selected. If the urban population in any UT is 100%, all the sites are to be selected in urban areas only.

6. COMPONENTS TO BE ASSESSED

6.1 Intra and Intersectoral Coordination

The qualitative, quantitative and frequency of intra and intersectoral coordination will be assessed at central, state and districts, selected PHCs and villages/wards.

(i) Central Level

(ii) State Level

(iii) District Level

(iv) PHC Level (selected PHCs)

(v) Village/ward level (selected villages/wards)

6.2 Training

The training in respect of adequacy regarding number of participants and timing before MDA may be assessed at the following levels:

(i) Trainers' Training imparted to Medical College Faculty and State officers by the Dte. of NVBDCP or any other organisation

(ii) MO PHC Training

(iii) Health Workers'/Health Volunteers' Training

(iv) Lab Technicians' Training on LF Microscopy

(v) Drug Distributors' Training

6.3 Process Indicators

(i) Action Plans at State, District and PHC levels

The preparation and implementation of detailed action plans at different levels may be assessed.

(ii) Epidemiological indices from Sentinel and Spot check Villages/Ward

(a) Selection of sentinel and spot check sites

(b) Sample size and method of survey as per the guidelines

(c) Epidemiological indices: Mf rate, Mf density, Disease rate and Entomological (wherever available).

(iii) Line listing of lymphoedema/hydrocele cases

(a) Whether all the villages and towns covered in the survey

(a) Number of PHCs with population having indigenous LF cases

(b) Number of PHCs with population not having indigenous LF cases

(iv) Logistics of Drugs

(a) Demand of DEC and Albendazole as per population norm

(b) Supply and distribution of drugs in time and space

(c) Balance of drugs available at PHC, district and state levels after completion of MDA

(d) Physical verification of drugs on quality and shelf life

(e) Procedure followed for Quality Assurance of drugs

(v) IEC and social mobilisation

(a) Types and quantity of IEC materials distributed in the district

(b) Whether IEC material was printed in local language

(c) Advertisements in local press and other media

(d) Posters, banners, folders, handbills, etc. used in the programme.

(e) Whether interpersonal communication at village level has been adequately followed

(f) Group meetings in time and space

(g) Advocacy at different levels

(h) Any other innovative IEC programme (Specify)

6.4 Impact Indicators

The impact indicators are collected by the personnel involved in the collection of baseline/ impact data as described in Chapter-3. The impact assessment will be carried out in the districts where baseline data was collected before taking up MDA. The impact indicators cover the following parameters:

6.4.1. Epidemiological

Parasitological

- Mf rate
- Mf density

Disease rate (specify the rate of lymphoedema, hydrocele, etc.)

Entomological

- Mosquito density

- Infection rate
- Infectivity rate
- Mean number of L3/ infective larvae per infective mosquito

6.4.2. Operational

Social mobilization

Changes incorporated in IEC for treatment seeking behaviour of community for enhanced consumption rate of DEC and Albendazole tablets.

Coverage and Compliance

The actual drug compliance is determined by interviewing about 600 family members in each district following the sampling technique as indicated at point No. 5 as against the reported coverage in the drug registers. The information is to be elicited in such a manner that the community members will give the information without any apprehension / hesitation.

Management of Side Effects of Drugs:

(a) Whether community was made aware of transitory side effects especially among infected persons

(b) Whether the side effects were properly recorded

(c) Whether symptomatic treatment was provided to individuals reporting side effects

(d) Proportion of mild and serious side effects, if any

(e) Whether serious side effects were immediately referred to the PHC for remedial measures

Morbidity Management

(a) Community awareness on morbidity management methods

(b) Number of cases observing simple methods of foot hygiene in the villages under mid-term assessment

(c) Impact of morbidity management

(d) Facilities for hydrocelectomy in the selected CHC areas/District Hqrs. and if so, the number of hydrocele operations conducted during the preceding 12 months

7. FINANCIAL ASPECTS

The Central funds received by the State/UT or the Societies for ELF from MOH&FW, Dte. of NVBDCP and ROH&FW, timely release of these funds to the districts and judicial utilization of funds by the districts will be assessed. The funds provided by the State/UT from their own budget

in cash and kind as well as inputs by public/private sector and NGOs, etc. are also be covered.

7.1 Submission of Mid-Term Assessment Report

The assessment will have to be completed within 4 days in each district and the assessment report along with **recommendations** fulfilling the objectives shall be submitted to the Dte. of NVBDCP within 10 days after the completion of field visit.

The sample questionnaire for householders to assess drug compliance is given at Annex.7.1

Annex 7.1

PROFORMA FOR ASSESSMENT OF MDA COMPLIANCE

Record examination: Name:_____

Village		**Sub-centre**		**PHC**		**District**									
Name of Head of Family															
Name of individual interviewed				Age /Sex											
No. of persons in the family			Age in years												
			Sex												
No. of DEC tablets (100 mg) given to each person															
No. of Albendazole tablets given to each person															

The questionnaire should be highly discreet for extracting information on drug compliance. The Drug Administrator's household register may be collected from PHC and carried to the village/ ward for cross-checking the entries. The names of the family members and their age should be checked. The first request to the householder shall be:

Interview of the householder:

(ii) **Physical verification of tablets:** Please show me the anti-filarial tablets given to you by the drug administrator.

No of 100 mg DEC given		No. of DEC tablets recovered from the house			
No of persons taken full dose		Number taken partial dose		No. not taken DEC	
No of 400 mg Alb. given		No. of Albendazole tablets recovered from the house			
No of persons taken full dose				No. not taken Alb.	

(iii) **Defaulters:** (a).Why did the particular person (name the defaulter) not take the drugs?

(b) Did you persuade the defaulter to take drugs?

(C) Did you help the drug administrator for drug compliance in your village or mohalla?

(iv) **Drug Administrator:** Do you have any reservations on drug administrator? If yes, please specify.

Did you swallow the tablets in the presence of Drug administrator? If no, why?

Did the drug administrator explain to you about ELF and the details of transmission?

(v) **Side Effects:** Did you experience any side effect of drugs? If yes, did you get remedial drug? Did you receive treatment for any ailment before experiencing side effects of drugs?

(vi) **IEC:** When did you first hear about MDA and from whom?

Did you read or see any banner, poster, newspaper advertisement, handbill, mike announcement, drama, street play, etc. on MDA?

If yes, which is the most effective one?

(a) **Disease Cases:** Do anyone of your family member or neighbour or person in your village suffer from LF disease? If yes, name them?

(b) Do you consult a **qualified physician**? If no, what are the reasons?

(c) Record any other relevant information on MDA

Name & Signature of Investigator Date

Annex 7.2

COMPLIANCE/SIDE REACTION (ACTIVE) SURVEY

District:———————————— PHC:———————————— Village:————————————Street: ————————————

Date of drug distribution:..... Date of survey:..... Collected by:..... Door No. .....

Number of tablets recovered: Big.....Small.....

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Sl. No.	Name	Age	Sex M/F	Respondent	Received tablets				Did DD		Swallowed Y/N	If No, Reason for not swallowing	If swallowed				Side reaction Y/N	Details of side reaction				Passing worms in stool Y/N
					Y/N	If yes from whom	No. tablets		Persuade	Explain			No.of tablets		In presence	After food		Duration (In days)	Type[1]	Treatment (G/P)	Treatment for other ailment	
							Big	Small					Big	Small								
1																						
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						

[1]Details of side reaction

Codes: Headache (1); Fever (2); Dizziness (3); Fatigue (4); Nausea (5); Vomiting (6); Diarrhoea (7); Abdominal pain (8); Joint/muscle pain (9); Swelling of limb (10); Swelling of nodes/scrotum (11); Rash (12); Scrotal reaction (13); Presence of nodules (14).

Annex: 7.3

Awareness and acceptance (Only head/responsible person of the family)
Name:
What is the source of information on MDA (list)? 1 2 3 4 5 6
Which is / are the most effective one(s) in the order ot priority? 1 2 3 4 5
Did any one suffer from LF disease?
Self:
Family member:
Community member (number, M/F)
Do you have any reservation about the drug distributor?
If yes specify:
Who in your opinion to be given the responsibility of DD?

Drug administrator:

- Examine the family register:
- How many tablets
- Received/distributed/balance

Verify the family register:

- Received or not
- Number of tablets received against each member
- Correct dose

Interview with the household member (for self and other family members)

- Did you receive
- How many
- Get back the balance drugs to confirm whether they consumed (partial/ selective) or not
- Side effects
- Partial
- Over/under dose
- IEC – source of information

CHAPTER 8

Roles and Responsibilities of Officers and Staff for MDA Campaign

The roles and responsibilities of different categories of officers and staff at various levels viz. National Programme Headquarters, State Programme Headquarters, District Headquarters, PHC/Town, Sub-centre and village/ward are given below. The duties are mentioned as general guidelines, which may be adapted to rules and regulations of Govt. /Local Body.

1. RESPONSIBILITIES OF NATIONAL PROGRAMME HEADQUARTERS (DIRECTORATE OF NATIONAL VECTOR BORNE DISEASE CONTROL PROGRAMME)

i Organising meetings of National level steering committee, National Task Force and National Technical Advisory Committee. Constituting Expert Group for formulating guidelines on various aspects of ELF and prepare national strategic plan for ELF.

ii Preparatory national workshop with involvement of State Programme Officers, NVBDCP, NCDC, ICMR and LF Experts and review meetings.

iii Technical guidance, monitoring and independent evaluation of ELF.

iv Formulating budget proposal for appropriate central funds for implementation of ELF in the endemic states.

v Procurement of DEC and Albendazole and supply to endemic states/UTs.

vi Preparation/Updating of operational manual on ELF and circulation to all the endemic states/ UTs/Medical colleges.

vii Develop training modules/Learning Units on relevant aspects of ELF and develop a national plan for training of manpower in ELF.

viii Develop prototypes on IEC with the help of media agencies and media experts and circulate to the states/UTs for printing in local language.

ix Undertake advocacy for decision makers at national and state/regional levels.

x Plan operational research with the help of NCDC, ICMR and other research institutions.

xi Monitor, assess and evaluate the programme on process and impact indicators regularly to issue guidelines for corrective measures wherever warranted.

xii Identify teams consisting of physicians, pharmacologists, epidemiologists and social scientists for investigation in the field in the event of any report of adverse reactions.

xiii Collaborate with WHO, international/bilateral agencies, private & public sectors, NGOs, other ministries, etc. on ELF and co-ordinate ELF activities between the states through ROH&FWs and officers of Dte. of NVBDCP.

2. RESPONSIBILITIES OF STATE PROGRAMME HEADQUARTERS

The Nodal officer for Elimination of Lymphatic Filariasis of the State Health Deptt. has to supervise the entire work of ELF in the State.

i. He will organize the drug procurement for the next round of MDA even before the MDA dates are announced (usually in January)

   a. Calculate the number of tablets required using the formula for DEC 100 mg tablets: population updated based on the last available census x 2.5 and for Albendazole 400 mg tablets: Population x 1.

   b. Send the request for tablets under the PIP to Director NVBDCP, Delhi

   c. When the drugs are received, store them at Headquarters or any other identified stores till the date of MDA is announced.

   d. Arrange to check the quality of drug & inform to centre about the result.

   e. Arrange to distribute the drug to the peripheral areas sufficiently early before the MDA

ii. Process for the release of funds for the ELF activities including MDA Programme from State Health Society to the District Health Society to make the funds available to the District programme officers and PHC medical officer and at grassroots.

iii. Start training activities as soon as the proposal has been approved and funds sanctioned.

   a. Prepare a training calendar for MOs, Paramedical staff and drug administrators

   b. Conduct training for MOs at a venue convenient to the participants

   c. At the end of the training, participants will be expected to be familiar with the basics of the programme, their responsibilities and to develop further training at the periphery for the paramedical staff, drug administrators and inform the community leaders.

iv. Organize a STF meeting and STAC meeting as per schedule.

v. Issue instructions and ensure to organize DCC meetings as per schedule

vi. Organize inter-sectoral meeting as per schedule

vii. Start BCC activities as soon as the funds are realized.

   a. Choose the IEC channel that is most effective in the community (from the following options – miking, interpersonal communication, street plays, skits and dramas, banners (cloth or digital), hoardings, advertisements in local print media, TV spots in local cable network, All India Radio and Doordarshan, slides in cinema theatres, pamphlets and leaflets. Use celebrity endorsement for the programme, wherever possible.

   b. Follow the financial guidelines.

   c. Ensure .that all IEC materials are distributed and displayed in the sites already chosen well ahead of the MDA date and also ensure their proper dismantling and return to Hqrs. for subsequent use and accountability.

viii. Start the mapping activities 120 days prior to MDA date.

ix. Choose the fixed sentinel sites

   a. Choose 3 PHCs with highest number of disease cases.

   b. Choose 3 subcentres with highest number of disease cases from among these PHCs

   c. Choose a village with highest number of disease cases from each of these subcentres.

   d. Choose an urban ward with the highest number of disease cases.

Chose the random (Spot check) sites

   a. Choose any 3 PHCs irrespective of disease status

   b. Choose 3 subcentres within these PHCs irrespective of disease status

   c. Choose any village from each of these subcentres irrespective of disease status.

   d. Choose any urban ward at random irrespective of disease status.

x. Arrange to collect at least 500 smears from each of these sites (total 4000 or more slides).

xi. The community should be made aware of this activity soliciting their cooperation using village leaders' meetings and other BCC methods.

xii. Depute lab staff to conduct the night blood surveys and arrange for their examination at the headquarters. Calculate the mf rate for each sentinel site. This is essential to determine the success of the programme and should be completed well before the MDA date. It will also serve as a benchmark for selecting BCC activities with particular emphasis on vulnerable pockets.

xiii. Organize an entomological survey between 6 a.m. and 10 a.m. in the same sites selected for blood smear survey, which shall be made from 10 catching stations each with 15 minutes catch wherever feasible (between 6 *a.m.* and 10 *a.m.*).

xiv. One week prior to the MDA, dispatch the drugs as per demand raised by the PHC Medical Officers.

xv. Starting one week before the MDA, step up the publicity for the MDA by increasing the BCC activities.

xvi. On the NFD, ensure that you are fully available for the MDA activities. Visit as many sites as possible to oversee the MDA activities

a. Identify problems faced by the PHC Medical Officer on that day

b. Redress the problem to the best of your ability

c. Assess the response of the public and evaluate the availability of drugs in the community and their reactions

d. Identify and remedy bottlenecks and redress them

e. Handle the media using standard guidelines

f. Ensure that the PHC is prepared for managing side reactions till the end of the mopping up day

g. Ensure that the RRT is available and inform the PHC medical officer of the arrangements made and provide contact information.

h. Set up an information cell preferably with a help-line to handle queries from the public, professionals and the media.

xvii. Collect the reports for the day including a) No. of people covered b) No. of drug distributors c) Frequency and intensity of side reactions d) Any admission to PHCs or state Govt hospitals e) other relevant information

xviii. Transmit the reports to Dte. of NVBDCP on the same day by fax.

xix. Supervise the mopping up operations on the second and third day using the same modus operandi.

xx. Submit the final report on MDA activities (NFD) to Dte. of NVBDCP on the 4th day.

xxi. Organize sample surveys to assess actual drug compliance by utilizing the services of designated institutes within 2-3 weeks after MDA (since recall may not be reliable beyond this point).

xxii. Collect the information on unused drugs from the respective PHCs for consolidation at headquarters within a month after completion of MDA.

xxiii. File your report with Dte. of NVBDCP before the end of 30 days after the MDA.

xxiv. Collect all relevant vouchers and expenditure statements from the PHCs.

xxv. Collect all relevant vouchers and expenditure statements from the Dist & State Headquarters.

xxvi. Submit a consolidated statement of expenditure as per guidelines to the Dte. of NVBDCP.

xxvii. Arrange for dispatching the Statement of Expenditure (SoE) and Utilization Certificate to the Dte. of NVBDCP. Unless the UC is submitted, subsequent release of funds will not be possible.

xxviii. Convene post-MDA DCC meeting to review the activities of the MDA.

3. RESPONSIBILITIES OF DISTRICT CO-ORDINATION COMMITTEE

i. The DCC is responsible for developing plan of action and implementation of all aspects of ELF in the district

ii. During the 1st meeting, all district level officers of different sectors and local NGOs are apprised about the purpose of MDA. They are requested to extend their co-operation by suitably instructing their subordinates down the line to co-operate in the programme.

iii. The National Filaria Day, mutually decided by Ministry of Health and Family Welfare, Govt. of India and Govt. of endemic states/UTs, is observed for conducting MDA in the endemic district and the preparatory work will be discussed in this meeting. This activity must start at least 90 days prior to the proposed date for MDA, usually 11th November.

iv. The 2nd and 3rd meetings of DCC are conducted as per schedule to review the implementation of MDA.

v. Following every DCC meeting, media-flash/press meet is conducted to disseminate the message for community cooperation and participation in ELF.

vi. The funds allotted to the districts are judiciously utilised with proper maintenance of records.

4. RESPONSIBLITIES OF DISTRICT VECTOR BORNE DISEASES OFFICER

vii. He/She is responsible for implementation of all ELF activities in the district in accordance with the directives given by the SPO and DCC.

viii. He should act as member secretary of DCC and convene the meeting under chairmanship of District Magistrate/District Collector and communicate the minutes to SPO and Dte. of NVBDCP. He should get the data compiled and summit timely reports to SPO and Dte. of NVBDCP, Delhi.

ix. He shall be responsible for the programme planning, implementation and monitoring, watch the progress, assess the results of sentinel and spot check sites from time to time and make necessary changes in the pattern of organization and methods that may be found necessary for achieving maximum compliance for MDA in consultation with SPO and DCC.

x. Ensure that the implementation of ELF in all the selected areas in the district and the funds earmarked by the state and centre for ELF are judiciously utilised for ELF. He should ensure timely submission of Utilization Certificates

xi. He should take appropriate measures deemed fit to improve the drug consumption level.

xii. He will have close supervision and co-ordination of the activities of different agencies. He will also coordinate with local branch of the professional bodies like IMA local branch in order to obtain support for MDA from the medical fraternity, hospitals, clinics, nursing homes, private practitioners, etc.

xiii. He will get the IEC material including folders on foot hygiene distributed to all the PHCs well in advance of MDA. He will get that multimedia messages are disseminated throughout the district collaborating with AIR, TV, cable, local press, posters, hand bills, group meetings, etc.

xiv. He will ensure that all the concerned PHC officials are given training on ELF who in turn will train the personnel down the line.

xv. He will get the mapping done in the identified areas as per schedule and demarcate the priority areas for MDA and make sure that baseline information and selection of sentinel/ spot check sites are undertaken.

xvi. He will place indent with the State Health Directorate as per schedule for supply of DEC+Albendazole tablets/other drugs and IEC material after taking into account the closing balance of drug(s) from the preceding round of MDA. He will ensure that adequate quantities of drugs are stocked in all the peripheral centres for symptomatic treatment of side effects of anti-filarial drugs wherever reported.

xvii. He will make frequent visits for on-the-spot technical guidance, seek public co-operation by meeting prominent people and remove administrative and technical bottlenecks in the smooth implementation of the programme.

xviii. He will get that the personnel of neighbouring PHCs independently evaluate MDA in the PHC when the microfilaraemia reaches below 1%.

5. RESPONSIBILITIES OF THE PHC IN-CHARGE MEDICAL OFFICER/MUNICIPAL HEALTH OFFICER

For MDA Programme:

i. He is the key person for the success of MDA programme.

ii. Determine the number of persons to be treated in the PHC area.

   a. Obtain the population size from the family registers

   b. Subtract the ineligible population (children less than 2 years, pregnant women and critically ill patients)

   c. Calculate the number of tablets required using the formula as mentioned in Annex 3.2, Table-8: Note.

   d. Place an indent with the Programme Manager (NVBDCP) for the issue of the drugs well in advance of the MDA date

iii. After attending the training programme organized by the programme manager at HQ, prepare the training calendar for a) paramedical staff b) drug administrators

iv. Convene a meeting of the village leaders to inform them about the programme

v. Ensure receipt of all registers, flash cards, IEC materials, etc. well in advance.

vi. Arrange to receive the funds earmarked for paramedical staff, training activities, drug administrators' activities including remuneration, and also for management of lymphoedema cases.

vii. Conduct the training for paramedical staff separately emphasizing their roles and need to motivate the community and ensure complete participation as per training manual. Identify drug administrators in the community. Select from NGOs, NSS volunteers and other local agencies involved in community development activities.

viii. Identify one drug administrator for every 250 population or 50 households to be covered

ix. Organize training for drug administrators at least a week before the NFD as per training manual.

x. Prepare a plan for the drug administration process identifying the areas to be covered by individual drug administrators who would have also a health staff to advise and assist in the drug administration process. Where possible, appoint a supervisory staff to monitor the activities.

xi. Arrange for the receipt of the drugs from the HQ at least a week prior to NFD and store them in a cool dark place (use a dark plastic cover as DEC is photosensitive)

xii. Organize a lymphoedema management camp in the PHC using the services of the filarial field staff. This is preferably done between 7 and 15 days before the MDA.

    a. Collect list of lymphoedema patients in the PHC area

    b. Assemble them at the PHC and demonstrate the techniques of foot hygiene and preventive foot care.

xiii. Plan of action for the NFD

    a. Map the area to be covered under the MDA

    b. Appoint the persons to distribute the drugs as per plan

    c. Issue the drugs in foil packs to the drug administrators.

    d. Ensure that the registers are taken to the field for listing the details

    e. Instruct the supervisory staff about their roles

    f. Should go to the area on NFD and assess the progress of the drug administration, identify problems and suggest solutions.

g. Ensure that the network for identifying and managing the side reactions is robust and functioning

h. Meet the public to assess their response and address their concerns.

i. Collect and consolidate the data at the end of the day for onward transmission to the state programme manager

j. Submit the reports for the day including a) No. of people covered, b) No. of drug administrators, c) Frequency and intensity of side reactions, d) Any admission to PHCs or state Govt hospitals e) other relevant information

k. Prepare for the mopping up operations for the next 2 days

l. Identify refusals and try to convince them to take the drugs

m. Arrange for submitting the necessary vouchers and unspent balance to the state programme officer within a week of the NFD

For Morbidity Management:

i. Assess the number of copies of the flash cards, forms for enumeration and line listing of the clinical lymphatic filariasis cases.

ii. Train the Health workers / Volunteers for identifying and grading the lymphatic filariasis cases in the implementation areas.

iii. Train the Health workers / Volunteers on all components of home based morbidity management procedures.

iv. Attend on all cases of ADLA episodes for effective management and advocating for prevention of further episodes.

v. Ensure the documentation of line listing for completeness and forward the consolidated reports on standard formats.

vi. Be fully in-charge of the implementation area and will be held responsible for all activities in his/her area.

vii. Must acquaint with all aspects of ELF work assigned. For implementing the campaign, get familiarized with the area and know the epidemiology of LF in the area by means of available data.

viii. Will have to see that the scheduled programme approved by the SPO and DCC is carried out correctly by the staff of the area. Indeed, he should set-up a code of work to the other members of the team. Strict discipline is essential for carrying out the scheduled work.

ix. In addition to the familiarity with the technical details of ELF work, he should also familiarize with the standing orders of the State Government, recruitment rules for volunteers, maintenance of accounts, etc.

x. Well in advance, he must determine the number of sub-divisions in the Implementation Unit and the number of supervisory staff and health workers/volunteers in each sub-centre/ village/ ward, taking into account the local conditions in respect of concentration of houses, accessibility by road, the type of local terrain, etc.

xi. He is fully responsible for Inter-sectoral partners- identification and their involvement in effective implementation of the MDA campaign.

xii. Training of the drug administrators is one of the most important aspects and he has to organize the training in local language.

xiii. He has to arrange distribution of drugs to all the drug administrators well in time and collect back balance of drugs after mopping up operations.

xiv. It would be his endeavour to know all the staff personally and inspire sufficient confidence in them as a leader to facilitate team-work.

xv. He must ensure that all the Senior Supervisory staff carry pocket notebooks in which MDA work is maintained and that should be available for inspection in the field by inspecting officers.

xvi. Draw up a clear schedule for maintenance of records and impress upon each subordinate staff that these returns are permanent records and should be very carefully prepared and submitted on the due dates after careful scrutiny to the district programme manager.

xvii. He should visit the field area frequently for on-the-spot technical guidance, seeking public co-operation by meeting prominent people and remove administrative and technical bottlenecks for the smooth implementation of the programme.

xviii. He has to attend without fail the serious side effect cases as soon as the staff report to him.

xix. He is fully responsible for ensuring 85% actual drug compliance of target population and monitoring of adverse / side reactions.

xx. He is responsible for imparting training for screening of the population for identifying established cases of lymphatic filariasis and implementing morbidity management packages.

xxi. He is fully responsible for the management of funds provided for the campaign.

6. RESPONSIBILITIES OF THE SUPERVISORY PARAMEDICAL STAFF/ HEALTH WORKERS

For MDA Programme:

i. Get thoroughly acquainted with the area allotted.

ii. Prepare the maps of the sector and sub-sectors showing the households, schools, factories, etc.

iii. Identify the Drug Administrators (DAs) from the implementation areas following the guidelines.

iv. Considering the density of the population, transit facilities, distribute the work to the DAs in such a way that the responsibility of each one of them could be pinned down.

v. As far as possible, supervise each one of them from time to time while on work.

vi. Collect the remaining drugs from the DAs and return them to MO in-charge.

vii. Collect the information on all the cases of side effects of drugs on day-to-day basis.

viii. Coordinate with the MO so that all the cases with side effects are attended within 24 hours of the reporting.

ix. Perform the duties of DA as and when decided by the MO in-charge.

x. Prepare for mopping up operations to achieve more than 85% actual drug intake (i.e. drugs to be swallowed in the presence of DA).

For Morbidity Management:

i. Collect the required number of flash cards and enumeration forms for line listing of lymphatic filariasis cases.

ii. While carrying out door-to-door enumeration for MDA, enquire for at least the most common clinical manifestations of lymphatic filariasis.

iii. Record all cases on the standard formats.

iv. Inform the MOs immediately if you identify any ADLA cases in the field.

v. Follow-up the patients with ADLA to ensure for the compliance of treatment.

a. He is mainly responsible for the implementation of MDA and Morbidity Management programmes in his area.

b. He should know the entire households of the implementation areas.

c. He is link between the Medical Officer and the drug administrators and success of MDA and prevention of disability will largely depend on his efficiency and integrity.

d. He is responsible for coordinating the work of drug administrators.

e. He is directly responsible for the coverage and the effective management of side reactions.

7. RESPONSIBILITIES OF DRUG ADMINISTRATOR

For MDA:

Drug administrator could be the health worker/ASHA/FTDs/DDCs/MLVs or Anganwadi worker or any other health functionary or health volunteer who shall be imparted training by MO-PHC on MDA and morbidity management.

He is the most important person in LF elimination programme. His active participation and administration of drugs to all the eligible community members is absolutely essential to eliminate one of the most dreadful diseases and make India free from lymphatic filariasis.

i. From the health worker, find out the locality and households in the community allotted to him for drug administration

ii. Try to locate the fifty households allotted

iii. Find out from health worker the date and venue of training on drug administration programme

iv. Attend the training programme; get all doubts on mass treatment programme clarified by the Medical Officer.

For Morbidity Management:

a. Take the flash cards personally for identifying filariasis cases in the community.

b. Showing the flash cards to the family members, enquire for filarial disease manifestations among any of the family members.

c. Enlist the cases and report to the supervisor.

d. Inform the participants about the home based morbidity management and its uses.

Three visits to households

Make at least three visits to the 50 households allocated to mobilize the people to participate in treatment and administer the drugs.

Make the first visit to the 50 households 10 days prior to the day of drug administration. Carry the enumeration register for 50 households and Drug administrators' Gate-folder. Verify the household members using enumeration register. Using the Gate-folder, explain in all the 50 households about the drug administration programme. Inform clearly about the date and time of drug administration. Clarify people's doubts about the mass treatment.

Make the second visit to the same 50 households three days prior to the day of drug administration. Using Gate folder, explain further about the programme. Emphasize that (i) chronic disease conditions are irreversible which persist life long (ii) chronic disease inflicts severe social and economic problems (iii) prevention of disease is easy and simple (iv) prevention requires only one treatment per year (v) it yields further benefits in terms of clearance of intestinal worms and make entire family healthy. Again, announce the date and time of drug administration. Request all the household members to be at home on drug administration day and take part in treatment. Clarify peoples' doubts.

Make third visit to administer drugs. Identify each household member with the help of enumeration register. After verifying the age, administer the drugs directly to each and every

household member (expect children below 2 years of age, pregnant women and seriously sick persons) according to the standard dosage schedule. Mark against the name in enumeration register on administration of drugs. Those who are not willing to receive and consume the tablets, try to explain the preventive value, benefits and safety of treatment, convince them and administer the drugs. Complete drug administration in all 50 households.

After 3-4 hours, once again visit all the 50 households, verify those who have not received and consumed the drug. Ask them to consume the drug. Identify those who were not available earlier and administer the drugs to them. Monitor for side effects, if any.

Management of side effects

Try to be around the 50 households until late evening and monitor if anybody is affected with side effects. Refer those who developed side effects to the health worker for palliative treatment. Ensure that they are properly taken care off, and do not allow the situation to spark any rumour.

Records and leftover drugs

Return the completed records i.e. the enumeration register with drug administration details and leftover drugs to the health worker. Inform him / her if you have had any serious problems during drug administration.

Programme support

Your efforts to administer the drugs to the community are supported by extensive education campaign through national and local TV, Newspapers, Radio, posters and pamphlets.

Drug administration next year

Note down all the important points you feel as necessary for your more effective participation in the programme next year.

Appendix 1

List of filaria endemic districts

Sl. NO.	LF endemic district	Sl. No.	LF endemic district	Sl. No.	LF endemic district	Sl. No.	LF endemic district	Sl. No.	LF endemic district	Sl. No.	LF endemic district
	Andhra Pradesh		**Bihar**	10	Gumla	10	Nanded		**Uttar Pradesh**		**West Bengal**
1	Chittoor	25	Nawada	11	Hazaribagh	11	Nandurbar	1	Allahabad	1	24-Parganas North
2	East Godavari	26	Patna	12	Lohardaga	12	Osmanabad	2	Ambedkarnagar	2	24-Parganas South
3	Guntur	27	Purnea	13	Ranchi	13	Sindhudurg	3	Auraiya	3	Bankura
4	Karimnagar	28	Rohtas	14	Sehebganj	14	Solapur	4	Azamgarh	4	Bardwan
5	Krishna	29	Saharsa	15	West Singhbum	15	Thane	5	Baerilly	5	Birbhum
6	Mahboobnagar	30	Samastipur		**Karnataka**	16	Wardha	6	Ballia	6	Cooch-Behar
7	Medak	31	Saran	1	Bagalkot	17	Yawatmal	7	Balrampur	7	Maldah
8	Nalgonda	32	Sheikhpura	2	Bidar		**Orissa**	8	Banda	8	Midhnapur East
9	Nellore	33	Sheohar	3	Bijapur	1	Angul	9	Barabanki	9	Midhnapur West
10	Nizamabad	34	Sitamarhi	4	D.Kannada	2	Balasore	10	Basti	10	Mushidabad
11	Prakasam	35	Siwan	5	Gulbarga	3	Bhadrak	11	Bherich	11	Nadia
12	Rangareddy	36	Supaul	6	Raichur	4	Boudh	12	Chandauli	12	Purulia
13	Srikakulam	37	Vaishali	7	U.Kannada	5	Cuttack	13	Chitrakoot		**Puducherry**
14	Visakhapatnam	38	West Champaran	8	Udupi	6	Deogarh	14	Deoria	1	Puducherry
15	Vizianagaram		**Chhattisgarh**		**Kerala**	7	Dhenkenal	15	Etawah		**A & N Islands**
16	West Godavari	1	Bilaspur	1	Alappuzha	8	Gajapati	16	Faizabad	1	Andaman & Nicobar
	Assam	2	Dhamtari	2	Ernakulam	9	Ganjam	17	Farrukhabad		**Daman & Diu**
1	Dibrugarh	3	Durg	3	Kannur	10	Jagatsinghpur	18	Fatehpur	1	Daman & Diu
2	Darrang	4	Janjgir	4	Kasargod	11	Jajpur	19	Gazipur		**D & Nagar Haveli**
3	Dhemaji	5	Jashpur	5	Kollam	12	Jharsuguda	20	Gonda	1	D & Nagar Haveli
4	Dhuburi	6	Mahasamund	6	Kottayam	13	Kendrapara	21	Gorakhpur		**Lakshadweep**
5	Kamrup	7	Raigarh	7	Kozhikode	14	Khurda	22	Hamirpur	1	Lakshadweep
6	Nalbari	8	Raipur	8	Mallapuram	15	Koraput	23	Hardoi		
7	Sibsagar	9	Surguja	9	Palakkad	16	Malkangiri	24	Jalaun		
	Bihar		**Goa**	10	Thrissur	17	Nawarangpur	25	Jaunpur	250	Total
1	Arraha	1	North Goa	11	Trivandrum	18	Nayagarh	26	Kannauj		
2	Arwal	2	South Goa		**Madhya Pradesh**	19	Nuapada	27	Kanpur Dehat		
3	Aurangabad		**Gujarat**	1	Chatrapur	20	Puri	28	Kanpur nagar		
4	Banka			2	Chindwara		**Tamil Nadu**	29	Kaushambi		
5	Begusarai	1	Amreli	3	Damoh	1	Chennai	30	Kheri		
6	Bhagalpur	2	Jamnagar	4	Datia	2	Cuddalore	31	Kushinagar		
7	Bhojpur	3	Junagarh	5	Katni	3	Kanchipuram + Saidapet	32	Lucknow		
8	Buxar	4	Navsari	6	Panna	4	Kanyakumari	33	Maharajganj		
9	Darbhanga	5	Porbandar	7	Rewa	5	Nagapattinam	34	Mahoba		
10	East Champaran	6	Rajkot	8	Sagar	6	Perambalur	35	Mau		
11	Gaya	7	Surat	9	Satna	7	Pudukottai +Aranthangi	36	Mirzapur		
12	Gopalganj	8	Valsad	10	Tikamgarh	8	Thanjavur	37	Pilibhit		
13	Jahanabad	9	Vadodara (Daboi Town)	11	Umaria	9	Thiruvallur + Poonamallee	38	Pratapgarh		
14	Jamui		**Jharkhand**		**Maharashtra**	10	Thiruvannamalai + Cheyyar	39	Raibareli		
15	Kaimur					11	Thiruvarur	40	Rampur		
16	Katihar	1	Bokaro	1	Akola	12	Trichy	41	Sant Kabir Nagar		
17	Khagaria	2	Chatra	2	Amravati	13	Vellore +Thiruppattur	42	Sant Ravidas Nagar		
18	Kishanganj	3	Deogarh	3	Bhandara	14	Villupuram + Kallakurichi	43	Shahjahanpur		
19	Lakhisarai	4	Dhanbad	4	Chandrapur	15	Madurai	44	Shravasti		
20	Madhepura	5	Dumka	5	Gadchiroli	16	Virudhunagar	45	Siddharthnagar		
21	Madhubani	6	East Singhbum	6	Gondia	17	Thirunelveli	46	Sitapur		
22	Munger	7	Garhwa	7	Jalgaon	18	Tuticorin	47	Sonbhadra		
23	Muzzaffarpur	8	Giridih	8	Latur	19	Krishnagiri	48	Sultanpur		
24	Nalanda	9	Godda	9	Nagpur	20	Karur	49	Unnao		
								50	Varanasi		