सत्यमेव जयते
Government of India

Revised Guideline on Elimination of Lymphatic Filariasis

2024

National Centre for Vector Borne Diseases Control (NCVBDC)
Directorate General of Health Services, Ministry of Health and Family Welfare,
Government of India

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JAGAT PRAKASH NADDA

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व रसायन एवं उर्वरक
भारत सरकार
Minister
Health & Family Welfare
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Government of India

MESSAGE

India has a strong track record in overcoming major public health challenges, from polio to COVID-19, highlighting our capacity to achieve ambitious health objectives. As the world's largest democracy, our Public Health efforts are immense, with monumental successes that demonstrate our commitment and capability.

To accelerate progress towards eliminating Lymphatic Filariasis (LF), India has introduced an Enhanced Five-Pronged Strategy. This strategy focuses on annual Mass Drug Administration (MDA) campaigns, morbidity management, early diagnosis, integrated vector control, and high-level advocacy with allied ministries, involving Medical Colleges and innovative approaches.

Under the able leadership of our Hon'ble Prime Minister Shri Narendra Modi ji, the healthcare sector has witnessed a paradigm shift, marked by a focus on preventive healthcare, robust infrastructure development, and innovative technology integration. We work together as Team India in realising the call to make India a developed nation by 2047- Viksit Bharat@2047.

Once a neglected concern, Lymphatic Filariasis is among top priorities of Government of India with target of eliminating the disease prior to the global target of 2030. This disease has severely impacted lives across multiple States imposing economic burdens. The National Centre for Vector Borne Diseases is making impressive advancements, driven by a commitment to ensure dignity and alleviate suffering for those affected.

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By eliminating this preventable disease, families can be freed from the harsh social and economic burdens it imposes. Through collaborative Government efforts and active community involvement, India is poised to eliminate Lymphatic Filariasis. This shift from a "can-do" attitude to a steadfast "will-do" determination underscores our collective commitment to transforming the lives of those in the most affected regions.

I am sure that all the States and Districts will create a plan of action by adopting and implementing the revised guidelines which embody our collective pledge to take decisive action and uphold our responsibility to the communities we serve.

I congratulate the team at the National Centre for Vector Borne Diseases Control for developing the Revised Guidelines on Elimination of Lymphatic Filariasis. I believe that the guidelines will empower us to forge ahead, overcoming challenges and embracing opportunities as we strive to eliminate LF and transform the landscape of Public Health in our nation.

(Jagat Prakash Nadda)

प्रतापराव जाधव
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सत्यमेव जयते

आज़ादी का अमृत काल

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आयुष मंत्रालय
व
राज्य मंत्री
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
भारत सरकार

MINISTER OF STATE
(INDEPENDENT CHARGE) OF
MINISTRY OF AYUSH AND
MINISTER OF STATE OF
MINISTRY OF HEALTH & FAMILY WELFARE
GOVERNMENT OF INDIA

MESSAGE

Lymphatic Filariasis (LF), commonly known as elephantiasis, is a parasitic disease transmitted through the bite of infected mosquito (Culex quinquefasciatus) which breeds in dirty/polluted water. Infection is usually acquired in childhood causing hidden damage to the lymphatic system, can lead to long lasting conditions like lymphoedema or elephantiasis of limbs and hydrocele (scrotal swelling). LF is a major public health problem in our country, with many states having high numbers of cases that affect people's lives and ability to earn a living.

The WHO road map for elimination of Neglected Tropical Diseases has set the goal of elimination of Lymphatic Filariasis /Haatipaon disease by 2030. To achieve this goal, the country has transitioned from a twin pillar strategy to an enhanced five-pronged strategy, with increased focus on multisectoral-coordinated efforts for vector control measures and increased preventive drug consumption during Mission mode MDA campaigns. There has also been an increased emphasis on early diagnosis and treatment of acute attack, thus preventing chronic disease manifestations.

I am happy to know that the National Centre for Vector Borne Diseases Control (NCVBDC) has prepared the "Revised Guideline on Elimination of Lymphatic Filariasis" and I believe that the implementation of the strategies of the revised guideline will accelerate the progress in the States and UTs to achieve the goal of Lymphatic Filariasis elimination. It will ensure availability of services for the LF affected people to prevent disabilities and in interrupting the transmission.

Under the visionary leadership of Hon'ble Prime Minister Shri Narendra Modi ji and able guidance of Hon'ble Union Minister of Health and Family Welfare, Shri Jagat Prakash Nadda ji, the Government of India is committed to achieving developed nation status by 2047. Our goal is to eliminate preventable diseases and ensure they have no place in our country. Let us unite in this mission for a healthier future for all.

A very sincere congratulation to the team at NCVBDC, technical experts, regional directors, consultants, state programme officers, and partners for developing this comprehensive and effective guideline.

सर्वे भवन्तु सुखिनः। सर्वे सन्तु निरामयाः।

Thank you

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सत्यमेव जयते

आज़ादी का अमृत महोत्सव

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MESSAGE

Lymphatic Filariasis (LF) is a debilitating vector-borne disease that poses a significant public health challenge in India. In recent decades, substantial progress has been made through health initiatives focused on improving individual and population well-being.

In the last 20 years since the National Filaria Elimination Programme started in 2004, India has made significant progress with 40% (138) districts successfully stopped Mass Drug Administration in reducing Lymphatic Filariasis. The revised guideline on "Elimination of Lymphatic Filariasis" provide insights into India's progress and outline a future strategy to eliminate Lymphatic Filariasis as a public health problem.

With the launch of the new guideline, the endeavor will be to accelerate interruption of transmission in all endemic districts through implementation of these strategies with focus on "whole-of-government" approach by ensuring that various government departments and stakeholders collaborate, share resources, and align strategies to achieve common goal of eliminating Lymphatic Filariasis as a public health problem.

Effective inter-sector collaboration must now form the cornerstone of our efforts towards LF elimination. This necessitates synchronized action across sectors such as health, rural development, education, tribal, drinking water and sanitation, women and child development etc. addressing both social and environmental factors contributing to LF transmission.

Lymphatic Filariasis is preventable, and upon achieving elimination, families can be freed from the harsh social and economic hardships associated with it. India has eradicated/eliminated four diseases namely Smallpox, Guinea worm, Polio and Yaws till date and I am sure with the Government as a whole approach, we will be able to achieve the goal of Lymphatic Filariasis elimination as a public health problem.

I am confident that with intersectoral coordination among stakeholders at all levels, coupled with the political and administrative commitment of the States and Union Territories, we will be able to achieve the goal of Lymphatic Filariasis elimination as a public health problem.

(Apurva Chandra)

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Government of India
Ministry of Health & Family Welfare
Directorate General of Health Services

MESSAGE

The "Revised Guideline on Elimination of Lymphatic Filariasis" will help the states and program officers with required guidance towards our goal of eliminating Lymphatic Filariasis. We have faced disruptive challenges in the recent past such as Covid 19. However, even in the face of adversity, work under the Lymphatic Filariasis programme continued.

With release of the revised guideline and through our multi-ministerial convergence, we are steadfast in our determination to strengthen Lymphatic Filariasis elimination in mission mode. By ensuring greater ownership and commitment at national level, as well as in endemic states, we aim to implement MDA rounds, intensify our focus on vector management and surveillance through multisectoral approach, and enhance capacity for Morbidity Management and Disability Prevention (MMDP) through early diagnosis and treatment.

This guideline emphasizes on diagnosis and treatment of early asymptomatic cases and acute cases which will prevent emergence of chronic cases and long-term disability. We need to reach out to communities in both urban and rural areas through functionaries from various departments to ensure last mile connect with communities.

I congratulate NCVBDC for bringing out this revised guideline which will help programme managers and frontline workers in effective implementation of Lymphatic Filariasis programme activities.

I am confident that collectively we will achieve a Lymphatic Filariasis-free India.

(Atul Goel)

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MESSAGE

Lymphatic Filariasis (LF), commonly known as elephantiasis, is a disfiguring and disabling disease, which inflicts stigma, shame, psychological distress, and socio-economic disadvantages to those affected by it. It is currently endemic in 345 districts of 20 states and UTs of India.

In 2023, India launched its enhanced five-pronged strategy to eliminate Lymphatic Filariasis as public health problem. The National Centre for Vector Borne Diseases Control (NCVBDC) is closely working with endemic states to eliminate Lymphatic Filariasis by implementing initiatives such as Mass Drug Administration (MDA), Inter-sectoral convergence, Morbidity Management and Disability Prevention (MMDP) as a part of the five-pronged strategy.

Revised Guidelines on Elimination of Lymphatic Filariasis presents a comprehensive snapshot of activities to be undertaken to eliminate Lymphatic Filariasis from the endemic States and Union Territories. The guidelines will be pivotal in streamlining efforts, increasing capacity, awareness, and adopting context-specific strategies for endemic districts.

Under National Health Mission, States are provided with adequate budget and resources for implementing the activities in LF programme. Additional support for monitoring and social mobilisation in MDA priority blocks/districts is also provisioned to enhance compliance and service delivery. To attain the goal of elimination of Lymphatic Filariasis, high-level bureaucratic oversight is crucial to accelerate efforts at all levels. Action is also required to integrate Lymphatic Filariasis with other health interventions at primary health care level.

I would like to congratulate the VBD Division of Ministry of Health &Family Welfare, Director of National Vector Borne Diseases Control and the team, Experts, Consultants, and Agencies that were involved in formulating Revised Guidelines on Elimination of Lymphatic Filariasis.

The States/UTs can now advance the goal of Lymphatic Filariasis elimination by implementing Revised Guidelines on the ground.

(Aradhana Patnaik)

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MESSAGE

India's progress in the elimination of Lymphatic Filariasis (LF), under the guidance of the Hon'ble Minister of Health and Family Welfare has shown remarkable momentum. The National Center for Vector Borne Diseases Control has developed revised guidelines on Elimination of LF in view of the emerging changes that the national strategy on LF has recently adopted with introduction of new interventions.

Our focus extends to reduce the suffering caused by the disease through Morbidity Management and Disability Prevention (MMDP) activities with focus on MMDP services at the implementation unit level and clearing the backlog of hydrocele surgeries to minimize the impact of lymphedema and hydrocele.

Revised Guidelines on Elimination of LF acts as a resource to the implementers at the state, district, and block level for effective implementation of MDA campaigns, surveillance, inter-sectoral coordination and vector control activities. It is crucially important that a high quality of service delivery is ensured for the effective control of LF.

Under the National Health Mission (NHM), regular reviews are undertaken for programme implementation. Adequate availability of funds will also be ensured in NHM Project Implementation Plans for implementing programme activities as per the State/UTs requirements.

It is envisaged that these guidelines will be very useful to the programme implementers at all levels for achieving the target of eliminating the disease.

(Vandana Jain)

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MESSAGE

Lymphatic Filariasis (or elephantiasis) is a painful, disfiguring disease that spreads by the bite of Culex Mosquitoes. It causes abnormal enlargement of body parts and can lead to disability.

The Global Programme to Eliminate Lymphatic Filariasis was launched in 2000 with twin pillar strategy of Mass Drug Administration (MDA) and Morbidity Management and Disability Prevention (MMDP) to end LF and over the years, India has made significant progress in tackling Lymphatic Filariasis. In January 2023, the government of India revised the elimination strategy from twin-pillar to enhanced five-pronged strategy to accelerate the LF elimination. By implementing comprehensive strategies, boosting public awareness, and fostering inter-sectoral and community collaboration, India aims to reduce the disease burden significantly and is committed to eliminate Lymphatic Filariasis ahead of the 2030 global target.

The guidelines on Lymphatic Filariasis (LF) control in India were last released in 2009. Based on evolving program needs, new strategies have been adopted, The revised guideline incorporated valuable lessons learned and provide comprehensive guidance for program managers and stakeholders, focusing on early diagnosis and treatment with algorithms, morbidity management and disability prevention, line listing of Mf positive and lymphedema and hydrocele cases, follow up mechanisms, block level strategy with enhanced surveillance, engagement of medical colleges, social and behavior change, intersectoral convergence, post-MDA coverage evaluation surveys, and vector management.

The revised ELF guidelines will serve as an invaluable resource for programme managers and stakeholders across all levels and will provide comprehensive guidance on implementing various activities, management, and disease control.I am confident that these revised guidelines will greatly benefit all stakeholders involved. These updates reflect the latest advancements and best practices in the fight against Lymphatic Filariasis.

(Tanu Jain)

PREFACE

In the last few decades, there has been a remarkable effort in the field of health as numerous initiatives have been taken to address individual and population health. Lymphatic Filariasis (LF) is a vector-borne disfiguring and disabling disease that remains a significant public health problem in India. Over the last few years, our country has made strong strides towards eliminating LF. By scaling up Mass Drug Administration (MDA) rounds across endemic districts and ensuring access to Morbidity Management and Disability Prevention (MMDP), the government's National Centre for Vector Borne Disease Control (NCVBDC) has significantly improved outcomes for those living with the effects of LF.

The previous edition of "Guidelines on Filariasis Control in India and Its Elimination" were released in 2009. During the ensuing period, many valuable lessons have been learned by the program and newer strategies like triple-drug therapy, smaller implementation units (block)/evaluation unit strategy, enhanced five-pronged strategy and focus on Urban MDA, early diagnosis and treatment, vector management, etc. have been incorporated in the revised Lymphatic Filariasis guidelines.

The revised guidelines have been carefully reviewed and updated based on the latest scientific evidence and recommendations from experts in the field. These revised Elimination of Lymphatic Filariasis (ELF) guidelines are envisaged to:

- Provide useful resources for program managers and stakeholders across all levels and will provide comprehensive technical guidance on implementing various activities, management, and disease control towards achieving the elimination goal.
- Serve as an operational guide for various LF related activities to be performed across various levels of the system.

The Revised Guideline on Elimination of Lymphatic Filariasis is poised to play a critical role in effective program management, a cornerstone for ensuring LF elimination from India.

ACKNOWLEDGEMENTS

The formulation of the Revised Guideline on Elimination of Lymphatic Filariasis (LF) Programme is a collaborative effort involving senior government officials, technical experts, and partners. Their expertise, commitment, support, and guidance have shaped this comprehensive guideline. As we delve into the details of the Revised Guideline on the Elimination of Lymphatic Filariasis Programme, we acknowledge and appreciate the invaluable contributions of these individuals and organizations in our pursuit of an LF-free future.

The guidelines were extensively reviewed, revised, and drafted by a core group of experts. We also express our gratitude to other experts who contributed to the discussions /deliberations held during various meetings to revise the guidelines.

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ABBREVIATIONS

ACMO	Additional Chief Medical Officer
ADLA	Acute Dermatolymphangioadenitis
ALB	Albendazole
AAM	Ayushman Arogya Mandir
ANM	Auxiliary Nurse Midwife
APELF	Accelerated Plan for Elimination of Lymphatic Filariasis
ASHA	Accredited Social Health Activist
ASI	Association of Surgeons of India
AV	Audio Visual
AWW	Anganwadi Worker
BCC	Block Coordination Committee
BCC	Behavior Change Communication
BCM	Block Community Mobilizer
BDOs	Block Development Officers
BEO	Block Education officer
BMO	Block Medical Officer
BTF	Block Task Force
BWSC	Block Water and Sanitation Committee
CDPO	Child Development Project Officer
AWC	Anganwadi Centre
CFA	Circulating Filarial Antigen
CFA	Circulating Filarial Antigen
CHCs	Community Health Centers
CHW	Community Health Worker
CMO	Chief Medical Officer
CS	Civil Surgeon
CSR	Corporate Social Responsibility
DA	Double Drug Administration (DEC + ALB)
DALYs	Disability-Adjusted Life Years
DAs	Drug Administrators
DCC	District Coordination Committee
DCs	District Collectors
DEC	Diethyl Carbamazepine
DGHS	Directorate General of Health Services
DHS	Directorate of Health Services
DMO	District Malaria Officer
DMs	District Magistrates
DOC	Directly Observed Consumption (Administration of MDA drugs)
DVBDCO	District Vector borne Disease Control Officer
DWSC	District Water and Sanitation Committee
ELF	Elimination of Lymphatic Filariasis
EPBs	Expanded Polystyrene Beads
EU	Evaluation Unit
FAQ	Frequently Asked Questions
FLWs	Front Line Workers
FTS	Filaria Test Strip
GPELF	Global Program for Elimination of Lymphatic Filariasis
HSCs	Health Sub Center
HtH	House to House
IAP	Indian Academy of Pediatrics
ICDS	Integrated Child Development Scheme
IHIP	Integrated Health Information Platform
ICT	Immunochromatographic test
IDA	Triple Drug Administration (IVR+ DEC+ ALB)

IEC	Information, Education and Communication
IMA	Indian Medical Association
IPC	Interpersonal Communication
M&E	Monitoring & Evaluation
IU	Implementation Unit
IVR	Ivermectin
LF	Lymphatic Filariasis
LLIN	Long Lasting Insecticidal Nets
MDA	Mass Drug Administration
Mf	Microfilaria
MLA	Member of Legislative Assembly
MLC	Member of Legislative Council
MMDP	Morbidity Management and Disability Prevention
MO	Medical Officer
MoHFW	Ministry of Health and Family Welfare
MOIC	Medical Officer In charge
MP	Member of Parliament
MPW	Multipurpose Worker
MSG	Mission Steering Group
NBS	Night Blood Survey
NCC	National Cadet Corps
NCVBDC	National Centre for Vector Borne Diseases Control
NDD	National Deworming Day
NGOs	Non-Governmental Organizations
NHM	National Health Mission
NPSP	National Polio Surveillance Project
NSS	National Service Scheme
NTD	Neglected Tropical Disease
NTEC	National Technical Expert Committee
NUHM	National Urban Health Mission
NULM	National Urban Livelihood Mission
NYK	Nehru Yuva Kendra
PHC	Primary Health Centre
PIP	Project Implementation Plans
PMJAY	Pradhan Mantri Jan Arogya Yojna
PRI	Panchayati Raj Institution
RBSK	Rastriya Bal Suraksha Karyakram
RRT	Rapid Response Teams
RWAs	Resident Welfare Associations
SBC	Social Behaviour Communication
SBM(G)	Swachh Bharat Mission (Gramin)
SCC	State Coordination Committee
SC	Sub Centre
SHG	Self Help Group
STAC	State Technical Advisory Committee
STF	State Task force
TAS	Transmission Assessment Survey
TPE	Tropical Pulmonary Eosinophilia
UC	Utilization Certificate
UPHC	Urban Primary Health Centre
URN	Unique Registration Number
VBDs	Vector Borne Diseases
VBDC	Vector Borne Disease Consultant.
VHSNC	Village Health Sanitation and Nutrition Committee
VWSC	Village Water and Sanitation Committee
WHO	World Health Organization

Chapter-1

EPIDEMIOLOGY AND ELIMINATION OF LYMPHATIC FILARIASIS PROGRAMME

- As of 2023, 345 districts in India are endemic for Lymphatic Filariasis (LF), with a population of about 740 million at risk.
- Lymphatic Filariasis ceases to be a public health problem when the Microfilariae rate of <1% or Antigenemia Rate of <2% is achieved.
- India introduced the enhanced five-pronged strategy in 2023 to accelerate the elimination of LF.
- In India, Wuchereria bancrofti, transmitted by Culex quinquefasciatus has been the predominant infection contributing to 99.4 % of the problem in the country.
- The life span of adult worms is 6-7 years and after mating each female worm produces millions of microfilarae (Mf)

1.1 Introduction

Lymphatic filariasis (LF) is a mosquito borne parasitic disease caused by thread-like nematode worms. The disease is widespread and a significant public health problem in many states and union territories of India. The LF disease is categorized as a Neglected Tropical Disease by WHO, however, for India it is one of the **priority diseases targeted for elimination**. LF disproportionately affects impoverished communities, perpetuating and exacerbating poverty. In communities where filariasis is endemic, all ages are affected. While the infection may be acquired during childhood, its visible manifestations such as limbs oedema may occur later in life, causing temporary or permanent disability.

Parasite

LF is caused by three filarial parasites – *Wuchereria bancrofti, Brugia malayi and B. timori.* *W. bancrofti* is the main parasite responsible for the transmission of LF in India and its prevalence across the endemic districts, however *B. malayi* is restricted to some districts of Kerala and Odisha. The Micro filaria (Mf) of both the parasites exhibit nocturnal periodicity and are transmitted by nocturnal mosquitoes. However, the *timori* is not found in India. The details of these parasites and their characteristics are mentioned in the following Table 1.1

Table 1.1: Characteristics of B. *malayi* and W.*bancrofti*

Characteristics	*B. malayi*	*W. bancrofti*
Geographical distribution	Some endemic districts of Odisha and Kerala	Endemic districts of India
Vectors	Mosquitoes (Anopheles & Mansonia Species)	Mosquitoes (Culex, Aedes, Anopheles & Mansonia Species)
Habitat		
Adults	Lymphatic System	Lymphatic System
Microfilariae	Blood	Blood
Periodicity of Microfilariae	Nocturnal	Nocturnal
Morphology of Microfilariae		
Sheath	Present	Present
Length(μm)	175-230 (in films); 240-300 (in 2% formalin)	240-300 (in films); 275-320 (in 2% formalin)
Width (μm)	5.0-6.0	7.5-10.0
Tail	Tapered; sub-terminal and terminal nuclei widely separated	Tapered; anucleate
Key Features	Long head space, sheath stains pink in Giemsa; terminal and sub-terminal nuclei	Short head space; sheath unstained in Giemsa; body in smooth curves; dispersed nuclei

Vector

In India, 99.4% of infections are caused by *Wuchereria bancrofti* and rest by *Brugia malayi*. The transmission of LF occurs through mosquitoes, i.e *Culex quinquefasciatus and humans* are the exclusive host of infection. For further details on Vector, please refer to chapter 11.

1.2 Life cycle of the parasite

The parasites responsible for this condition are thread-like worms known as filariae. They undergo development within the lymphatic vessels, leading to detrimental effects on the human lymphatic system and its associated tissues. Often contracted during childhood, this affliction profoundly impacts the body's intricate network of vessels and specialized tissues. The lymphatic system is crucial for maintaining fluid balance, organ health, and serving as a cornerstone of the body's immune defense. However, the presence of filariae or adult worms within this system disrupts its delicate equilibrium, resulting in the retention of fluid within tissues. This disruption manifests as chronic swelling, mostly observed in the lower limbs.

Adult worms survive for 4-6 years, generating millions of microfilariae that circulate in the bloodstream, at night. Mosquitoes ingest these microfilariae during blood meals, where they mature into infective larvae. Subsequent mosquito bites transmit these larvae to another healthy person. Upon transmission, the larvae migrate through the skin to the lymphatic vessels, where they develop into adult worms. The development cycle of the parasite is depicted in the below Figure 1.1 that can be understood to undergo eight stages of development as explained below:

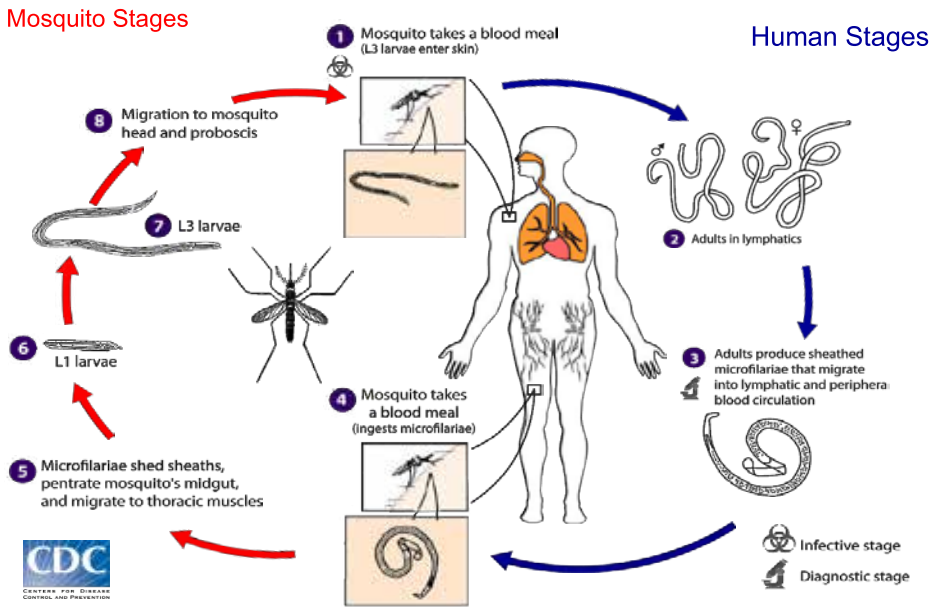


Figure 1.1: Life Cycle - Wuchereria bancrofti

During a blood meal, an infected mosquito introduces third-stage filarial larvae onto the skin of the human host, where they penetrate the bite wound.1 They develop in adults that commonly reside in the lymphatics.2 The female worms measure 80 to 100 mm in length and 0.24 to 0.30 mm in diameter, while the males measure about 40 mm by .1 mm. Adults produce microfilariae measuring 244 to 296 µm by 7.5 to 10 µm, which are sheathed and have nocturnal periodicity. The microfilariae migrate into lymph and blood channels moving actively through lymph and blood.3 A mosquito ingests the microfilariae during a blood meal.4 After ingestion, the microfilariae lose their sheaths and some of them work their way through the wall of the proventriculus and cardiac portion of the mosquito's midgut and reach the thoracic muscles.5 There the microfilariae develop into first-stage larvae6 and subsequently into third-stage infective larvae.7 The third-stage infective larvae migrate through the hemocoel to the mosquito's proboscis8 and can infect another human when the mosquito takes a blood meal.1

1.3 Clinical spectrum

LF is characterized by a wide range of acute and chronic clinical features. The acute form of the disease is called adenolymphangitis (ADL) and encompasses acute dermatolymphangioadenitis (ADLA) and acute filarial lymphangitis (AFL). ADLA, defined as acute inflammation of the skin, lymph vessels, and lymph glands associated with secondary bacterial infection, is more commonly termed acute attack and requires antibiotic therapy. Acute filarial lymphangitis involves inflammation caused by the death of adult worms and is self-limited. Chronic manifestations include. lymphoedema and hydrocele. For further details on treatment, please refer to Chapter 7.

1.4 Global Programme for Elimination of LF and Disease Burden

Following the World Health Assembly resolution in 1997, and encouraged by innovations in diagnostics and treatment, WHO launched a Global Program to Eliminate LF (GPELF) in the year 2000.

The objective of GPELF was to eliminate LF as a public health problem, which translates into reducing the prevalence of LF infection below a threshold level. The strategy of GPELF was two-fold: 1) to stop the transmission of infection with mass drug administration (MDA), and 2) to alleviate suffering among people affected by the disease through morbidity management and disability prevention (MMDP).

Globally, among the 72 LF- endemic countries and territories, the following table 1.2 presents the country status in implementing MDA for LF elimination (2022)

Table 1.2: Global LF endemic countries and territories status and MDA status

MDA not started.	MDA started but not at scale	MDA scaled to all endemic IUs	Post-MDA Surveillance	Elimination as a public health problem
Gabon	Angola, Central African Republic, Madagascar, Nigeria, Sudan, Papua New Guinea	Burkina Faso, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Equatorial Guinea, Ethiopia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Mozambique, Niger, Senegal, Sierra Leone, South Sudan, United Republic of Tanzania, Zambia, Zimbabwe, Guyana, Haiti, India, Indonesia, Myanmar, Nepal, American Samoa, Fiji, French Polynesia, Federated States of Micronesiaa, Malaysia, New Caledonia, Philippines, Samoa, Tuvalu	Benin, Cameroon, Eritrea, Mali, Sao Tome and Principe, Uganda Brazil, Dominican Republic, Timor-Leste, Brunei Darussalam	Egypt, Yemen, Togo, Malawi, Bangladesh, Maldives, Sri Lanka, Thailand, Cambodia, the Cook Islands, Kiribati, Marshall Islands, Niue, Palau, Tonga, Vanuatu, Viet Nam, Laos, Wallis and Futuna,
1	**6**	**36**	**10**	**19**

1.5 Elimination of LF and Disease Burden in India

LF has been widely prevalent and is a serious public health problem in India. The National Filaria Control Program (NFCP), established in 1955 to combat the disease, yielded only limited results. Its strategy, focusing on the detection and treatment of Mf carriers and vector control, was implemented only in a limited number of urban areas. A vast majority of the endemic population in rural areas could not be covered by the program, due to lack of infrastructure and low prioritization of the disease.

A pilot project to eliminate LF, using annual single-dose MDA (Diethylcarbamazine alone), was started in 1996-1997 in 13 districts of 7 states. This enabled the national program to understand the logistics and operational aspects of the program. The project was extended to 31 districts in 2002, and Diethylcarbamazine (DEC) + Albendazole (ALB) combination therapy was implemented in some districts.

In 2004, the National Program was launched, covering 202 districts in 20 states and union territories. Subsequently, the program was further scaled up to 345 districts. Since 2007, the program has been implementing DEC+ALB combination therapy in all districts. In 2018, during the 10th GPELF meeting & launch of Accelerated Plan for Elimination of Lymphatic Filariasis (APELF), triple drug therapy (Ivermectin + DEC + ALB) was introduced as a pilot in 5 districts of five states. As of December 2023, 76 districts across 10 states have conducted at least one round of IDA. The APELF revitalized ongoing efforts by incorporating objectives, innovative interventions, and enhancing MDA, monitoring & evaluation, and surveillance methods. The objectives included to:

- Accelerate interruption of transmission in all endemic districts using enhanced preventive chemotherapy strategies.
- Provide a minimum package of care to all people affected with chronic disease to alleviate suffering.
- Augment the program activities towards preparation of LF elimination validation dossier.

India, being a signatory to the World Health Assembly resolution in 1997, initially aimed to eliminate filariasis by 2015, a goal that was later aligned with the global target of 2030 and aiming to achieve an Mf rate of less than one in endemic areas. For this, the MoHFW has developed the enhanced five-pronged strategy with new interventions to further accelerate the progress towards elimination.

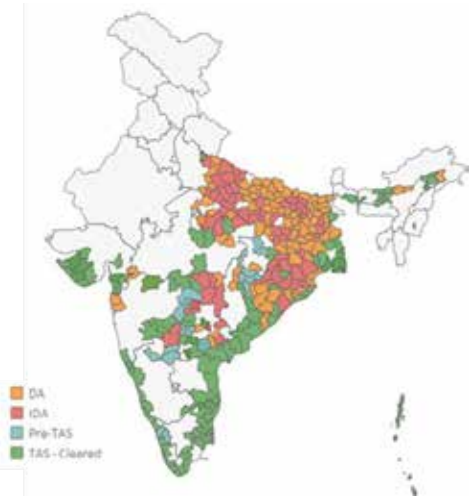


Figure 1.2: Current LF burden

In the year 2023, 20 states and union territories with 345 districts are endemic for LF, of which 170 districts implemented MDA campaign and 138 districts have stopped MDA and cleared Transmission Assessment Survey 1 (TAS1), with the remaining 37 districts in various stages of assessments. The reported number of chronic cases of Lymphedema and Hydrocele are 0.62 million and 0.12 million respectively (2023). The patients are being provided with the recommended minimum package of care to alleviate suffering and improve the quality of life. Under the program, a cumulative total of 2,13,208 hydrocelectomies have been performed till end of 2023 to improve the condition of the affected people.

1.6 Programme implementation

The National Centre for Vector Borne Diseases Control (NCVBDC) is the nodal agency responsible for implementing the Elimination of Lymphatic Filariasis (ELF). The NCVBDC implements the ELF under the ambit of National Health Mission (NHM). The program is implemented under the close monitoring of the MOHFW (as shown in Figure 1.3).

The Director-General of Health Services (DGHS) periodically reviews the program and guides the policy framework. NCVBDC provides policy guidance, technical guidelines, financial support and facilitates procurement of drugs and diagnostic kits. The states/union territories plan and implement the program and meet the targets as envisaged by the national program.

At the district level, the program implementation is managed by the Additional Chief Medical Officer (ACMO) or the District Vector Borne Disease Control Officer (DVBDCO). The Primary Health Centre (PHC) medical officer/urban medical and public health officer is responsible for the program implementation within the blocks/ Implementation unit.

Multipurpose Workers (MPW)/Multipurpose Health Workers (MPHW)/Accredited Social Health Activist (ASHA) facilitators, Block Community Mobilizer (BCM) supports and supervises the program implementation, and ASHA/Auxiliary Nurse Midwife (ANM) implement it in each village. In urban areas, implementation is undertaken by urban local bodies such as municipalities and corporations. Under the National Urban Health Mission (NUHM), the Urban Community Health Centres (U-CHCs) and Urban PHCs are responsible for implementation of the program. In the entomological zones, the zonal entomologists are responsible for periodically monitoring and coordinating entomological surveillance and vector control activities.

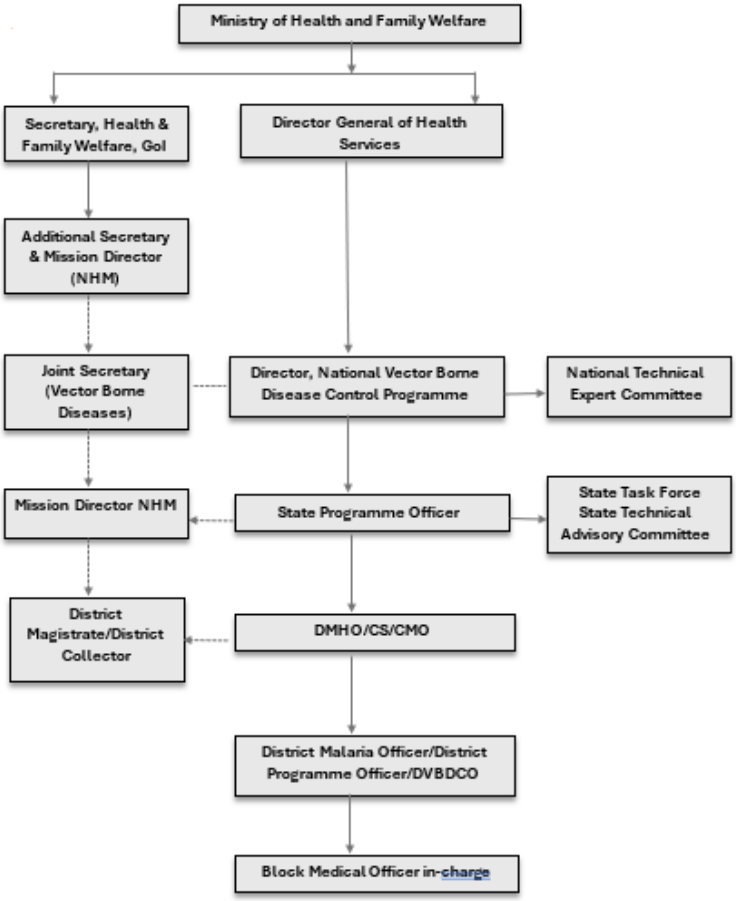


Figure 1.3: LF programme leadership at various levels

Programmatic Steps for Elimination of LF

To eliminate LF the series of programmatic steps illustrated below in the figure 1.4 which depicts the constituents and steps in Mass Drug Administration and Morbidity Management and Disability Prevention that aims of stopping the spread of LF infection and alleviating suffering among people who have the disease along with the Vector control activities to interrupt transmission.

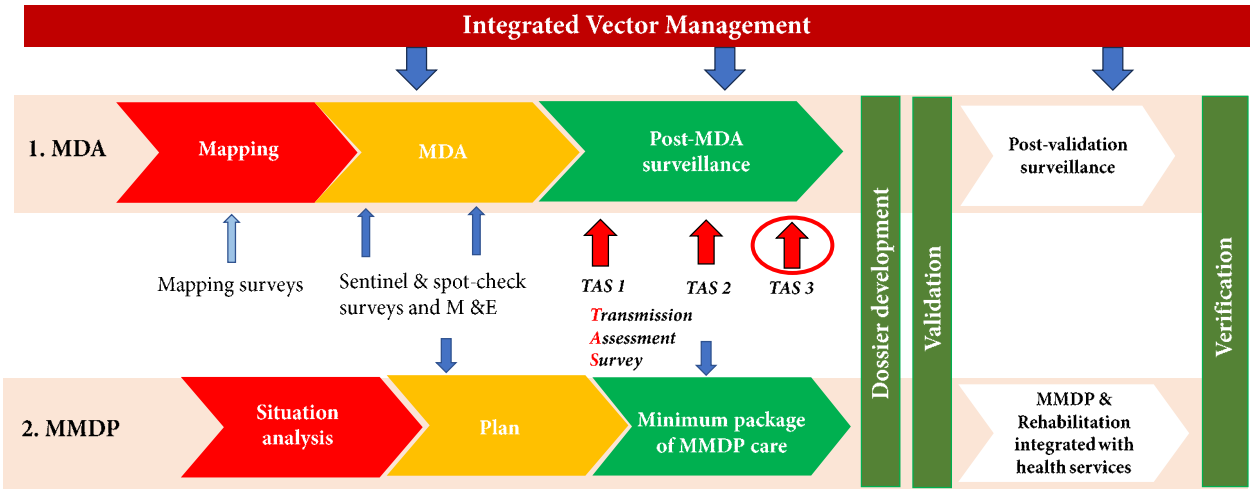


Figure 1.4: Different constituents and steps of LF elimination programme

1.7 Committees (Institutional Mechanisms) for Implementation of ELF Programme

The following are the different committees (institutional mechanisms) that are in place for the implementation of Lymphatic Filariasis Programme at various levels.

- National Technical Expert Committee (NTEC)
- State level: State Task Force (STF) & State Technical Advisory Committee (STAC);
- District level: District Coordination Committee (DCC) and District Task Force (DTF)
- Block level: Block Coordination Committee (BCC) to steer and implement the LF Programme

The details of the Task Force/Coordination Committee meeting along with terms of reference are mentioned in Annexure 1.

1.8 Progress of Elimination of Lymphatic Filariasis in India (2004-2023)

The ELF has made considerable progress since its inception in the year 2004 with significant reduction in the disease burden in 6 states/union territories namely Goa, Puducherry, Dadra &Nagar Haveli and Daman & Diu, Tamil Nadu, Lakshadweep, Andaman & Nicobar Islands that have stopped MDA and a few states are close to elimination status.

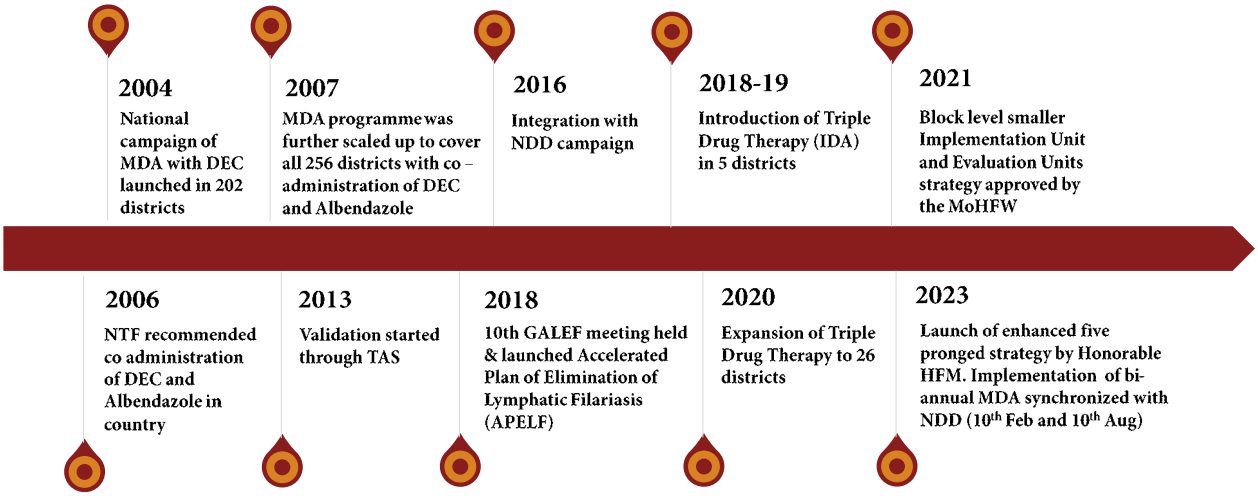


Figure 1.5: The key milestones in ELF programme

Chapter-2

MAPPING OF LYMPHATIC FILARIASIS

- Mapping is systematic epidemiological assessment of a geographical area to determine if a disease is actively transmitted in the area.
- Districts are classified as endemic districts (transmission present) and non-endemic districts (transmission absent).
- Non-endemic districts can be Confirmed or Uncertain
- Confirmatory mapping methodology is used to determine the endemicity status of the uncertain blocks of the district.

2.1 Introduction

The steps recommended by the WHO for elimination of LF begin with mapping. Mapping is the systematic epidemiological assessment of all geographical areas to determine if a disease is actively transmitted in each area. Mapping is done in uncertain districts to delineate the endemic areas for implementing intervention measures. The mapping of uncertain areas should be completed at the earliest to plan and implement intervention measures in a timely manner and eliminate LF from the country. Hence, mapping remains a high priority for elimination of LF.

2.2 Implementation unit as the basis of sampling for delineation of LF endemicity

The implementation unit (IU) should serve as the basic survey unit for mapping and delineating endemicity. With the help of all available information, such as published data, unpublished survey data, distribution of vectors and mapping survey data, all districts/blocks in the country should be classified as:

a. **Endemic districts/blocks (transmission present):** These endemic districts/blocks are already identified under the programme and MDA is being implemented. Routine surveillance has also been established in these blocks.

b. **Non-endemic (transmission absent):** Non-endemic districts can be Confirmed or Uncertain. In certain districts, no MDA is required. These are the districts/blocks where conditions like weather and climate are not favorable for sustaining mf circulation even if an individual is infected with Mf. For example, districts in Jammu & Kashmir, Ladakh, Himachal Pradesh, Punjab, Haryana, Uttarakhand, Delhi, Rajasthan, Sikkim, Arunachal Pradesh, Nagaland, Tripura, Meghalaya, Mizoram, Manipur are considered non-endemic due to ecological conditions unfavorable for transmission of LF. However, if

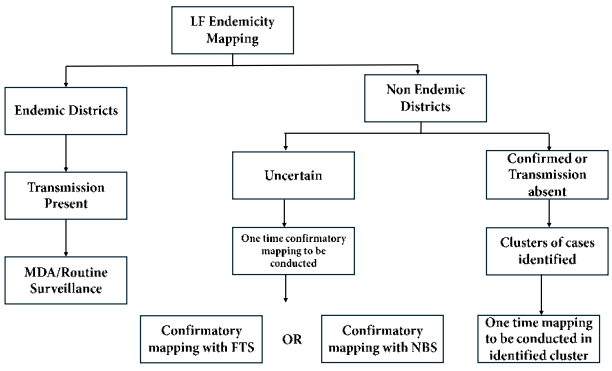


Figure 2.1 LF endemicity mapping

states identify areas with cluster of cases (Lymphoedema and Hydrocele), then these areas can be assessed for transmission status.

c. **Non-Endemic (Uncertain) districts/blocks:** As endemic countries move toward elimination, the demonstration of lack of transmission in all areas, including low-endemic areas or gray areas, has become increasingly important. The mapping approach generates more informative data about LF transmission, particularly in low-endemic settings, and to be used as a tool to assess recent transmission to make the decision of whether MDA is warranted.

Confirmatory mapping surveys using Night Blood Survey (NBS) or Filaria Test Strip (FTS) should be conducted (based on the availability) to determine if there is ongoing transmission in uncertain blocks in areas bordering endemic districts of endemic states, having migratory population or high burden of LF cases. All such areas should classify the districts using the below methods. The summary is presented in figure 2.1.

2.3 LF mapping method

Mapping exercises are required only for uncertain districts. WHO has recommended a confirmatory mapping methodology to determine the endemicity status of the blocks in the uncertain districts. Confirmatory mapping should be undertaken to delineate the endemicity status of blocks in uncertain districts, including urban and peri urban areas, to determine whether these areas require MDA. **The uncertain districts or areas are those:**

- Baseline mapping of districts with unknown endemicity status.
- Confirmation mapping of districts/blocks previously determined to be non-endemic or low endemic (less than 1% Microfilaremia or less than 2% Antigenemia), but with suspicions of recent ongoing transmission.
- Confirmation mapping of districts/blocks where previous mapping results were indeterminate.

2.3.1. Confirmatory mapping for LF with NBS

The Mf survey should include three sites **(one sentinel and two random)**. In case the block /IU does not have the details of chronic LF cases, then the selection of the sentinel site should be purposely done, considering factors such as most difficult, remotest, hard-to-reach villages, or urban areas with water logging issues. Additionally, in urban areas, consideration should be given to pockets with huge slums, migratory populations, and poor socio-economic conditions.

From each site (random and sentinel), a sample size of 300 should be **drawn (3 sites x 300)** among the general population **aged 20 years and above,** using systematic random sampling covering the households of that village or site. The Mf rate will be calculated separately for each of the sentinel and random sites. For the block/IU to be considered non-endemic, each site should report Mf rate of less than 1%.

If any of the three sites report an mf rate of more than 1%, the block will be considered endemic with pockets of transmission and will be considered for inclusion in Mass Drug Administration. Since microfilariae exhibits nocturnal periodicity, during Mf survey through NBS, **the sample should be collected after 10.00 pm**. The NBS and preparations should be organized accordingly, with prior information provided to the communities about the NBS.

2.3.2. Confirmatory mapping for LF with FTS

Survey Design and Sampling: A cluster survey design is used since cluster samples can include geographical representation of the entire IU or block. A school survey design is preferred because it is logistically easier to implement than community surveys and is representative of LF prevalence among the same age group in the community.

A school survey design using either systematic or cluster sampling has been developed by WHO, called Mini Transmission Assessment Survey to assess evidence of recent LF transmission and determining when MDA can stop.

In each IU, a certain number of schools should be randomly selected from a complete list of schools in the block using equal probability sampling, in which every individual in the target population (children in class 4-8) has an equal chance of being selected for the survey. By doing this, the results generated from this survey will produce an unbiased estimate of the prevalence of LF in this age group.

Step 1: Establish the sampling frame.

a. Determine the number of schools in the IU. Obtain a list of the schools and the estimated enrollment of students in class 4-8th standard (equivalent school class attended by children 9 to 14 years of age) at each school.
b. Sort the list of schools by geographical distribution in the IU.

Step 2. Design the sampling method: Cluster Sampling.

a. The block/IU should have a minimum of 40 schools to conduct cluster sampling. 30 schools (aka "clusters") should be selected from the total number of schools in the district and a predetermined fraction of students should be selected from each cluster.
b. Select the 30 schools using a method called 'probability proportional to estimated size' that ensures the probability of a school being selected into the survey is proportionate to how large the school is (e.g., schools with many students are more likely to be selected into the survey than schools with few students).
c. On average, 16 students will be selected from each of the 30 schools (leading to a total sample size of approximately 480). Calculate the sampling fraction for each school as follows: (sample size) / (school population in target classes). For example, if a school has 128 students in classes 4-8, then the sampling fraction would be 16/128 = 0.125, meaning that 1 out of every 8 students will be selected into the survey from that school (on average this should result in a sample of 16 students).

Note: When there are fewer than 40 schools in a block, please contact the NCVBDC for guidance on implementing systematic sampling methodology.

Step 3. Select students for the survey.

a. Visit only selected schools and use the sampling fraction specific to the selected school. Example: If the sampling fraction is 0.125 as mentioned above, then select every 8th student for testing. When visiting the next school, determine the sampling fraction for that school and select every Nth student.
b. Counting of students and selection can be done in the classroom or assembly.

Field Data Collection: All data collection will take place at the school site and should be conducted by trained teams with one laboratory technician and one data recorder. In each school, selected children will be tested for circulating filarial antigen using FTS in IUs suspected of *W. bancrofti* endemicity and for anti-filarial antibody using the Brugia Rapid Test in IUs where *Brugia* is suspected. Whole blood will be collected directly from the finger using a lancet and capillary tube then applied to the sample pad of the point-of-care rapid diagnostic tests. Testing will continue until all selected children have been tested, regardless of the number of positives found.

Interpretation and Decision: This survey is designed to estimate, with known probabilities of error, whether the average prevalence of LF infection among older school children in each targeted district is below or at/above a threshold of 2.0%. To assess if the threshold is reached, a critical cut-off value of positive children

has been established. If the number of antigen-positive children is at or below the critical cut-off, then the population prevalence is assumed to below the threshold i.e. ≤3 children for cluster surveys (see table below). Additionally, the survey also provides an estimate of LF infection prevalence in each IU-level sample of children 10-14 years of age.

The critical cut-off value and the sample size were chosen so that if the true antigen prevalence is ≥ 2%, the maximum chance of incorrectly passing an IU (i.e., no MDA needed) is 6% (alpha error), given that the design-effect assumption (1.5) is accurate. Using this threshold, areas with a true prevalence of 1% will fail (i.e., require MDA) more than half the time (40% power).

IUs with more than 3 positive children in cluster surveys are considered to require MDA. However, even if there are 1 or 2 positive children, local response must be initiated by treating the positives and conducting vector surveillance activities in that area.

Table 2.1 Critical Cutoff values for decision making by target population size.

Size of target population in the implementation unit	Cluster Sampling	
	Critical Cutoff*	Sample Size
0-749	NA	NA
750-999	NA	NA
1000-1999	3	450
≥2000	3	480

**If the total number of positive tests is less than or equal to this critical cutoff then the prevalence in the IU is likely <2% and MDA is not required.*

Treatment of Mf and Ag positives

All Mf positive cases confirmed by NBS or FTS test would be treated with Directly Observed Single dose of DA or IDA as per the MDA regimen followed by the standard 12 days treatment with DEC of dosage 6mg/Kg body weight for 12 days daily to be consumed after the meal. Each positive case should be followed up for a period of two years to prevent any chronic manifestations later. NBS of all the Mf positive cases need to be repeated every 6 months till the time the individual is negative for Mf.

Chapter-3

ENHANCED FIVE-PRONGED STRATEGY FOR ELIMINATION OF LYMPHATIC FILARIASIS

- The LF programme has historically followed two-pronged strategy for elimination of LF.
- India adopted enhanced five-pronged strategy which was launched by Hon'ble HFM in January 2023.
- Focus on Mission mode MDA, early case detection and MMDP services by engaging Medical Colleges, Vector Control, intersectoral coordination and digital platforms for LF reporting.

3.1 Introduction

In the past five years, 40% of the endemic districts in India have ceased Mass Drug Administration (MDA) and continue to report community Microfilaria (Mf) rates below 1%. To accelerate the ongoing efforts and achieve elimination of the disease before 2030, India adopted enhanced strategy for accelerated interventions. The projected timeline demonstrates that steady progress is possible if the enhanced intervention plan is implemented, with all districts stopping MDA.

NCVBDC adopted new strategies that are aligned to bring about the following systemic changes, including:

- Heightened ownership and commitment at national level and by endemic states & UTs towards improved planning and implementation of MDA campaign.
- Enhanced focus on vector management and surveillance through a multisectoral approach targeted to improve environmental factors (including improved sanitation etc.) that address mosquito breeding.
- Addressing gaps including emergence of new LF endemic districts after mapping of uncertain districts & re-establishment of transmission in areas cleared TAS 3 due to migration.

3.2 Enhanced Strategies for Elimination of Lymphatic Filariasis

1. Mission mode Annual MDA (Mass Drug Administration):

Efforts to improve drugs compliance with Directly Observed Consumption (DOC) with target aiming >90% coverage against the eligible population.

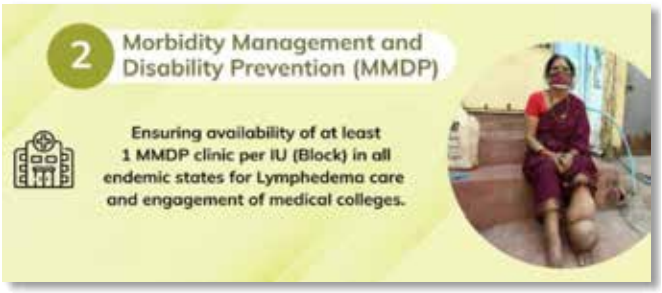
Annual MDA Campaign in Mission Mode: A major policy shift in conducting MDAs campaign **in two phases once a year** in endemic districts that are synchronized with National Deworming Days (NDD) on **February 10 and August 10**. The objective is to bring unprecedented focus and synergy to the programme and mass visibility to improve community compliance to MDA drugs.

Key aspects:

- High-level MDA reviews conducted by the Chief/Principal Secretary at the state level, Commissioners at the division level, District Magistrates (DMs) or District Collectors (DCs) at the district level, and Block Development Officers (BDOs) along with Medical Officers at the block level.
- States are provided with 3 months of preparation before the MDA is to begin.
- Targeted MDA for urban areas with accountable human resources through outsourcing, comprehensive micro plans covering high-risk groups, migratory population, and workplaces, engagement of NSS and CHOs of Ayushman Arogya Mandir. Mobile Booth for transit points and static booths at health facilities, medical colleges, marketplaces, offices, institutes, schools, Anganwadi centers etc.
- Utilizing Rastriya Bal Suraksha Karyakram (RBSK) human resources during MDA rounds.
- Strengthening lab capacity and systems for enhanced surveillance and quality assurance.
- Ensuring an adequate supply of drugs and diagnostic's considering increased requirements for scale up along with improved drugs and logistics management.

2. Morbidity Management and Disability Prevention (MMDP)

Clearing the backlog of hydrocele surgeries for all eligible patients to achieve zero pendency of hydrocele operations and 100% MMDP Kits distribution.



Leveraging the provisions under the PMJAY scheme under Ayushman Bharat to clear backlogs. Ensuring updated line lists of lymphoedema and hydrocele cases in all PHCs, blocks, districts, and states. Ensuring early diagnosis and treatment of LF cases across all levels to prevent progression to chronic disability. Ensuring the provision of social security benefits under schemes of the Government of India and state governments for the social inclusion of LF patients. Uploading the line list of cases to the Integrated Health and Information Platform (IHIP) portal.

Medical College Engagement

To address the challenges and to enhance access to quality services in LF, Medical Colleges can play a vital role in accelerating the elimination goal. Medical Colleges, through their academic, research and service-delivery facilities offer an untapped opportunity to provide quality care in the LF Elimination programme with their expertise and experience. The following are the roles that Medical Colleges can play.

1. ***Service Delivery***
   - Early Diagnosis and treatment for LF cases.
   - Treatment for episodes of *adenolymphangitis* (ADL) or acute attacks.
   - Surgery for hydrocoele patients and management of lymphoedema patients with clinical, surgical, and psychosocial interventions.
   - Monitoring support during MDA campaigns.
2. ***Capacity building***
   - Act as nodal training centres for providing quality trainings to district and sub district level service providers.

- Training on proper collection of blood smears and microscopy examination procedure by lab technicians for Mf survey and quality assurance for the collected slides.
- Creating a pool of master trainers amongst the faculty of various departments for LF.

3. ***LF Program management***
   - Dissemination of program guidelines and policy framework to the medical students.
   - Engaging faculty and postgraduate students of community medicine and microbiology departments in taking up research activities.
   - Proactively engage in and contribute in LF State Technical Advisory Committee meetings.
4. ***Monitoring, Learning and Evaluation***
   - Conduct Coverage Evaluation Surveys and engage in other monitoring activities such as MDA, NBS, etc. as per need.
   - Data management, analytics, and reporting on government portals such as IHIP etc.
   - Conduct academic and operational research for evidence-based actions.
   - Organize conferences or meetings to disseminate the learnings and to disseminate operational research work with professional bodies and other institutes on a regular basis.

3. Vector Control (Surveillance & Management)

Strengthening entomological surveillance for lymphatic filariasis. Implementing source reduction of the vector and ensuring the availability and capacity of human resources for vector surveillance and control.

In addition to vector control, intersectoral coordination is crucial for integrated vector control. This involves collaboration between different departments, such as health, education, and sanitation, to address the social and environmental factors that contribute to the transmission of LF. For example, improving access to clean water and sanitation facilities can reduce the breeding sites for mosquitoes and decrease the risk of LF transmission.

4. High Level Advocacy:

Engaging existing platforms such as Education, Civil Supply, State Rural Livelihood Mission, Panchayat Raj Institutions, Tribal Affairs, WCD, Youth Affairs, etc., in generating demand for MDA in the community through high-level engagement of the Ministry of Health and Family Welfare and NITI Aayog for intersectoral convergence.

Political and Administrative engagement:

- Sensitize political leaders so that they publicly support pre-defined outcomes under ELF to build an enabling environment for success.
- High Level National, State & District reviews for MDA, MMDP.
- National/State/District Task force on LF led by Secretary Health, ACS/Secretary Health and DM/DC/ Municipal Commissioner respectively.

5. Innovative Approaches

- Faster adoption of newer diagnostics and patient management approaches in LF programme.
- Explore alternative tests for current FTS or Mf detection tools used for stopping MDA decision and surveillance.
- DEC Medicated Salt as an adjunct to Mass Drug Administration.
- Availability of high-end quality data and data analytics for informed decision making through the LF modules on IHIP portal that would generate:
  - o Interactive dashboard
  - o Digital Line listing of LF patients and Mf positives.
  - o Real Time Reporting - Disaggregated data on MDA coverage
  - o Surveillance data – Mf survey and TAS

Chapter-4

MASS DRUG ADMINISTRATION

- Mass Drug Administration (MDA) is one of the key strategies aimed to interrupt transmission of LF in endemic districts.
- IDA implementation was initiated in 2018 under the APELF and subsequently scaled up to other districts.
- For DA campaigns, annual MDA for at least 5 years and IDA for at least 2 years with an effective coverage among eligible population of more than 90% is recommended.
- In the urban areas that are selected for MDA, the involvement and ownership of urban PHCs under NUHM needs to be ensured, the MDA will be planned in alignment to the NUHM structures i.e. Urban PHC, Urban CHC, Medical Colleges, Nagar Parishads, Municipal Commissioners, ANM, Urban ASHA, MAS etc.

4.1: Introduction

Transmission interruption is one of the key strategies for LF elimination program. A single dose of anti-filarial drugs exerts profound microfilaricidal effect. The first round of MDA reduces the community microfilaremia prevalence and intensity appreciably, resulting in a reduction in LF transmission. The subsequent rounds of MDA further diminish community microfilaremia and transmission, resulting in zero or scant new infections, over a 5-6-year period. MDA also kills a significant proportion of the adult worm population, and the remaining worms move to fecund life span (5-6 years), leading to existence of no reproductively active adult worms and production of new generation of microfilariae. Therefore, implementing successful and effective annual MDA for a minimum of 5 to 6 years for DA or conducting two to three effective MDA rounds for IDA decreases Mf prevalence and intensity, interrupts transmission, and forms the central strategy of LF elimination programmes.

Mass Drug Administration is a method of administering preventive chemotherapy in which medicines are administered to the eligible population of an area endemic with Mf rate >1 at regular intervals, regardless of individual infection status with an objective to bring down LF infection prevalence to below the threshold level over a defined period so that it ceases to be a public health problem.

The annual dose is to be repeated every year for a period of 5-6 years for DA and 2-3 years for IDA aiming at more than 90 % of drug compliance against the eligible population. It must be ensured that all seasonal migrant workers in the endemic areas/blocks should be covered during MDA round.

Administering drug to every eligible individual requires active participation of community members and all other relevant stakeholders. For optimal MDA coverage and compliance, strong pre-MDA preparedness with engagement of health and non-health departments is required. Following are the key components of the Mass Drug Administration as depicted in Figure 4.1

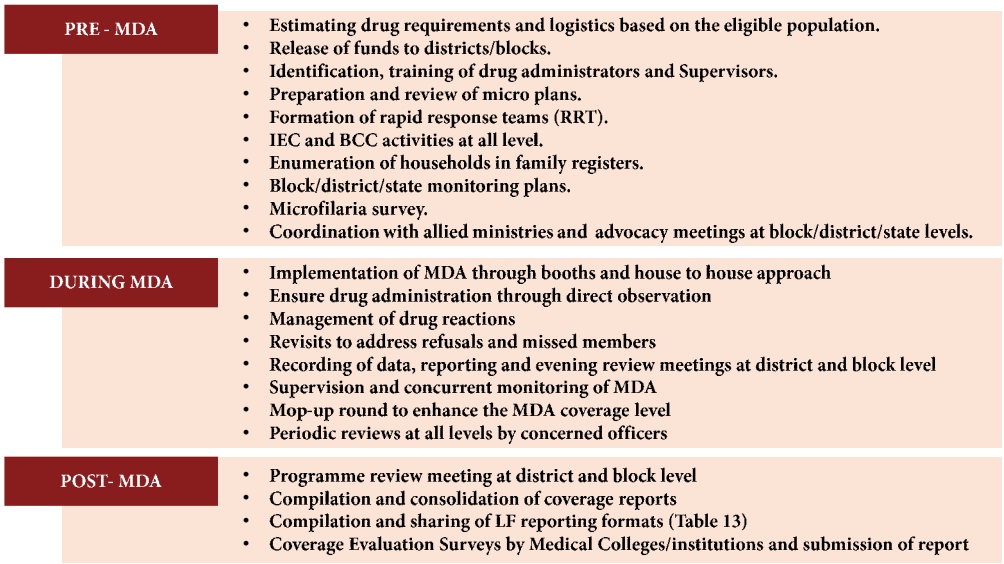


Figure 4.1: Key components of Mass Drug Administration

4.2 Pre MDA

4.2.1 Determining Population at Risk, Total and Target Population.

At the very onset of the programme, it's critical that the programme managers determine the population in the blocks/Implementation Units (IUs), state and overall, who are at risk of the disease as well as determine the total population and the eligible population to be covered under the programme. Once an IU has been defined as endemic for LF, the total population in that IU is at risk. The total population is sourced from the latest available Census of India or based on the decadal growth rate or government programme data whichever is the latest. For calculating the ineligible population for the LF programme, determine the population of pregnant women, children below 2 years of age and those people who may be severely ill. To calculate target population, the ineligible population needs to be deducted from the total population, which usually ranges between 5-15% of the total estimated population.

4.2.2 Target Areas and Population

In each district, to accelerate the progress for achieving the goal of elimination, the block level implementation strategy for MDA is considered. IU is defined as block in each endemic district. In the urban areas, the UPHC or Municipal area, slums to be considered as separate IU. The target population for MDA includes the entire eligible population of the endemic blocks/IUs or the urban areas with Mf rate > 1. From a safety perspective, the following categories of population groups are excluded from MDA as per below table 4.1.

Table 4.1: Population groups to be excluded for MDA

For DA	For IDA
• Children <2-year age • Pregnant women • Seriously ill people*.	• Ivermectin should not be administered to Children <5-year age or <90 cm tall. • Pregnant women. • Breast-feeding mothers within one week of birth. • Individuals with active serious illness *of an acute or chronic nature

Seriously ill patients may be considered as those who are bedridden with terminal illness such as cancer, kidney failure, liver failure etc.

Patients on any medications such as uncomplicated hypertension, diabetes, TB etc are not contraindicated for consumption of MDA drugs. Individuals > 65 years and breastfeeding mothers beyond one week should also consume MDA drugs.

4.2.3 Drug Requirements, Logistics, Drug Movement

Logistics is the process of estimating, procuring, supplying drugs to administration points, and maintaining inventory of logistics, so that the effective and efficient flow of goods and services from the point of origin to the point of consumption is achieved. The drug requirement for the programme is calculated for each block /IU based on population size, derived from Census and existing stock balance. The current year's drug requirement is calculated by subtracting the remaining balance of drugs (DEC, Albendazole, and Ivermectin) from the previous year's supply.

Medical Officers of PHCs/CHCs/UHCs and Health Officers of municipalities prepare the requirements of drugs and submit those to the district level officers who in turn submit to the State Programme Officer (SPO). For Urban areas, Medical Officers of UHCs/HWC and Health Officers of municipalities will prepare the requirements of drugs and submit to the district level officers who in turn submit to SPO. The request for drugs for the current year should be submitted via the SPO and conveyed to NCVBDC. The state must receive the drugs at least three months prior to the scheduled MDA date. The drug requirement is calculated as given below in Table 4.2.

Table 4.2: Drug requirement calculation

Drug requirement calculation	
DEC (100 mg) required for IU	Eligible population of IU x 2.5
ALB (400 mg) required for IU	Eligible population of IU x 1
IVR (3 mg) required for IU	Eligible population of IU x 2.5

General drugs for managing adverse drug reactions: During the MDA programme, a proportion of the population that undergoes treatment may develop drug reactions. Most of these drug reactions are self-limiting and may subside without any treatment. Yet, some people with fever or nausea may require treatment with common drugs. Hence drugs such as paracetamol, ORS and some antihistamines may be readily available for Rapid Response Teams (RRT).

Drug Movement: Drug movement must be meticulously planned with a timeline of one month from the state headquarter to district headquarters, two weeks from district to Block/PHC before the MDA and 7-10 days from Block/PHC to villages where the drugs are administered by the Drug Administrators (DA) to ensure smooth operations. PHCs/CHCs are responsible for secure storage of drugs and subsequent transportation to villages.

Storage and Inventory of drugs: MDA drugs must be stored in designated areas at optimal temperatures, adhering to expiry dates with a first in, first out (FIFO) approach to prevent wastage. Continuous inventory monitoring throughout procurement, administration, and expiration is crucial to minimize waste. Damaged or expired drugs should be promptly disposed of following biomedical waste guidelines to prevent any potential misuse. It is the responsibility of the state administration to randomly check the samples of the drugs received prior to MDA and promptly inform the NCVBDC with details of the batch number, manufacturer name and expiry dates in case of any quality issues noticed with the drugs.

Supply of information, Education and Communication material ***(To be procured at least 2 months before MDA):*** Education materials like posters, pamphlets, and banners are procured in advance for MDA programs. These materials are distributed to PHCs/SCs for dissemination to health workers/DAs in villages and urban wards. States should use prototypes provided by the National Programme to print IEC materials, ensuring quality standards are maintained nationwide.

4.2.4 Identification of Drug Administrators, Supervisors and Trainings

Identification of Drug Administrators (DA): ***(To be recruited and have the lists ready 4-6 weeks before MDA):*** The identification and training of DAs in adequate numbers from within the community in each village/urban ward is an important activity in MDA. The Medical Officer in charge of the block will decide and include the names of the drug administrator in the micro-plan. Based on the total workload (e.g., the total number of houses to be covered during MDA), the medical officer in charge will also calculate and decide the total number of teams/ drug administrators in the entire block.

The Drug Administrators could be:

Rural area: ASHA worker/ Anganwadi worker/ Community Volunteer/ Teacher/ Social worker.

Urban area: Urban ASHA / Anganwadi worker/ Community Volunteer/ Social worker/ SHG members/ Nursing students/Mahila Arogya Samiti Members/NSS/NCC cadets etc.

Since these workers are local and have the confidence of the community. Support can also be sought from DUDA/Civil defense /NCC/NYK/NSS cadets and urban local bodies/corporation & PRI members. Usually, a team of two drug administrators (DAs) will complete drug administration in a well-defined area. If adequate manpower is not available, it is recommended to prolong activity with selected good DAs (Up to 15-20 days) rather than completing it early with unaccountable manpower.

ASHA is usually deployed at a population of 1000 (200 households) per area, and she must ensure drug compliance in all eligible population of her area. In areas where ASHAs are not available, other frontline workers such as AWW, SHG worker, Shiksha Mitra etc can be deployed as per the population norms as Drug Administrators.

The Drug Administrator Team should cover the entire catchment area and enlist support for the MDA in consultation with PRI members and other opinion leaders. The honorarium, as per national guideline, is not as per days of activity but rather to cover people i.e. INR 600 per Drug Administrator to cover 50 Houses/250 population. **To ensure quality of reach and directly observed consumption, each DA team should not cover more than 25 houses per day**. The honorarium needs to be calculated as per national norms of INR 600 for 250 population/50 houses. **The goal of the DA is to give the correct MDA dose under his/her direct observation and in no circumstance hand over or distribute drugs to the household members**.

Formation of Teams: A two-member DA team per area needs to be formed. Since MDA campaign involves House to House administration of drugs and other related work such as filling registers, house marking, finger marking and line listing of LF cases, The first member should administer the drug to beneficiaries and do finger marking. The second member should be responsible for updating the family register and house marking. They should work in cohesion and build a positive environment for drug administration activity in the rural and urban communities. For each village/urban area, a day wise detailed micro plan should be prepared by the DA team and submitted to PHC/UPHC. The DAs are supported by the heath supervisors.

Drug Administrator Supervisor: Each DA supervisor ideally need to cover 5 teams, and he/she is responsible to monitor the allocated teams and ensure that the teams are working as per the submitted micro plan and DA teams are administrating the drugs in the community and ensuring Directly Observed Consumption (DOC). The responsibilities of DAs and Supervisors are mentioned in chapter 12 (12.3 section).

Training: Training is an important component of the MDA programmes, conducted prior to the MDA round. Training should focus on the skills required to administer the drug in the community and provide information about the drugs, house and finger marking, documenting the family registers, side effects and any other concerns raised by the community for ensuring effective coverage and compliance to anti filarial drugs.

Although most of the health staff and DAs are involved in the programme every year, the training should be conducted prior to each MDA programme for district medical officers, PHC medical officers, supervisory staff, and health workers/DAs. The DA trainings need to be conducted at sector level or at the PHC/CHC by the trained MoIC and his team. The trainings need to be mentored by the District level officers and partners. Training should follow a cascade system as depicted in figure 4.2.

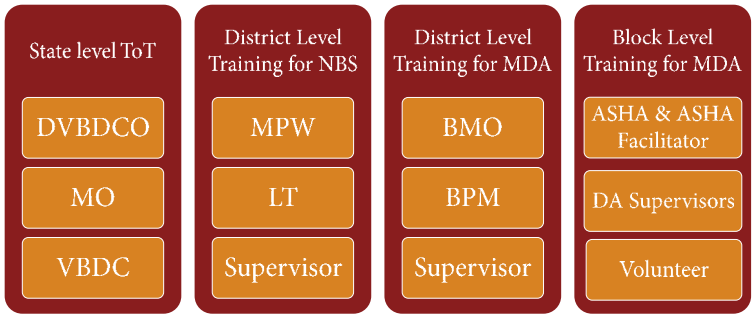


Figure 4.2: Training levels

The training should be conducted through lectures, interactive sessions, and role play. All efforts should be made to optimally utilize **Audio Visual (AV) training aids** during training. In absence of adequate AV infrastructure facility, digital platforms such as WhatsApp, YouTube may be utilized on mobile devices. The PHC medical officer and senior staff, who mostly act as trainers, should actively participate in the training throughout.

The Medical Officer In charge (MOIC) or the trainer should emphasize the need for MDA rounds, roles and responsibilities, documentation of registers/reports and discuss the previous year's performance/ problems during MDA, particularly lower coverage in certain areas, and discuss remedial measures for the problems encountered. In Urban areas, initially urban and municipal health officers would be trained at city level by the master trainers who would have received training at the state level. One training batch should ideally consist of 30 members and should not have more than forty participants and these trainings need to be monitored by senior officers and external monitors to ensure quality.

The training program should include imparting supervisory skills to supervisory staff. The supervisory staff and medical officer need to support the DA teams during the MDA campaign. A separate additional orientation needs to be conducted for DA team supervisors focusing on skills, monitoring checklist and support to be provided to DA teams.

The block medical officer/UHC/Municipal health officer in charge is responsible for planning the trainings of DAs as follows:

- Prepare the training schedule for DAs and supervisors.
- Communicate the training dates with the supervisors and DAs.
- Arrange the supplies and logistics (handouts, tally sheets, drugs, registers, dose poles, indelible markers, projector) required for trainings.
- Training material and aids such as audio visuals, flip book etc.

The following table 4.3 presents the training details for various cadres-

S No	Trainees/ Participants and Duration	Trainers/ facilitators	Topics
1.	District VBDOs and PHC medical officer's / Deputy Civil Surgeons/ Municipal Health Officer/MO PHC/ DCPM/RBSK MOs Duration: One day	District level programme officers supported by the state level programme officer, officers from regional office for Health & FW, GOI, WHO consultants, and faculty from medical colleges	Burden and epidemiology of LF, ELF programme, MDA implementation, importance of ensuring DOC, micro plans, drug requirements, adverse events and management, enumeration, house and finger marking, logistics, IEC materials, line listing LF cases, social mobilization, Supervision, Data recording, data flow and entries in IHIP.
2.	Training of Paramedical Staff/CHOs/ASHA facilitators at PHC / Municipal Level Duration: One day	Medical officers of PHCs, Municipal Health Officers, BCPM, MIs etc	Focusing on elimination of the LF disease - Causative organism, Transmission cycle, Clinical features, Drugs used for MDA and administration, house and finger marking, Dosage details, criteria of dosages, importance of DOC, Adverse events, referral and reporting , MDA activities – pre, during and post, cross checking ,line listing of LF cases, follow ups, mopping and treatment coverage (compliance to ingestion of drugs through DOC) , IEC and key messages, Dealing with resisting community members, Incentives, MDA reporting register/formats and IHIP data entry
3.	Training of DAs Duration: One day	Medical Officers and Supervisors	ELF, rationale for MDA, approaches for drug administration, logistics required for MDA, drugs dosages and administration, importance of DOC, marking of houses, finger marking, adverse events, referral and reporting, microplanning, family registers, cross checking, line listing of LF cases, follow ups, mopping and treatment coverage, FAQ, IEC and key messages, dealing with refusals, Incentives, MDA reporting formats and dataflow

4.2.5 Enumeration

Time frame: To be conducted 2 months- 2 ½ months before the MDA.

Enumeration of households and population is crucial for planning, implementing, and reporting the MDA activities. The enumeration data should be made available for each village/urban ward/community before the MDA programme date. This data is compiled for each family through house-to-house visits by the DA teams of the respective PHC/HSC or urban primary health center (UPHC). Family registers should be used to record the household data, all members of the family including children should be registered and the first name should be that of the head of the family followed by each family member the details need to be entered in different rows.

Care should be taken so that no household is missed in the community during the enumeration process. The family register is updated every year, and this should ideally be done before the MDA round.

- Family members who are permanently away from home due to work should be excluded from the list of eligible population for the MDA.
- All migratory populations arriving from LF-endemic areas should be administered MDA Drugs during MDA.
- All guests present in the house during the visit of the DA team should be administered anti- filarial drugs.

For recording details of suspected lymphoedema and hydrocele cases during the enumeration or during MDA along with filling of family register, it needs be filled by the concerned DAs.
The detailed family register format has been included in Annexure 2

4.2.6 Micro Planning

Time frame: To be completed at least 1 to 1 ½ months before MDA.
Annual microplanning is an essential prerequisite for MDA. The purpose of the micro plan is to have a clear understanding of all the activities and the number of houses to be covered on a particular day by DAs. Micro-planning should ideally be done at least one month before the MDA round. The person in-charge preparing the micro-plan should have practical knowledge of the number of houses, important landmarks, influential people in that area and the number of people residing there.

Microplanning of the urban area should be done based on urban wards, already demarcated in the cities/ towns. All the houses, and every member of the household needs to be enumerated in the family register/ enumeration list, so that the data related to every household of each ward is readily available with the programme for the planning purposes. The identification of the vulnerable areas must be evidence-based, and it should be ensured by the district VBD/programme officer to avoid missed areas. It would be better to also clearly map the areas which are not to be included in the MDA.

Ideally, microplanning should be done after the enumeration is completed. The enumeration should be completed at least two to three weeks before the start of the MDA campaign. The micro- plan is the blueprint that ensures that correct drugs and logistics are available in the right quantities, in the right places, and at the right time. The medical officer in charge will convene a meeting at the block/urban level in which all the supervisors, ANMs, ASHAs and AWW workers, Volunteers jointly develop micro plans of their respective areas. The Supervisors will submit their DA team micro plans to their MOICs, and all the micro plans will further be submitted to District VBD officer or concerned district officials. **The detailed micro plan template has been included in Annexure 3**

Maps: A local area field-map of each rural/urban ward under every planning unit must be prepared as a reference for planning day wise field activity including both booth and house to house visits during MDA. It is preferable to use the existing maps prepared for other national programmes such as non-communicable diseases screening, polio etc. Otherwise, a hand drawn simple map should include the planning unit, main roads, by-lanes, basic household cluster-locations, important landmarks, booth/drug sub-depot's locations, including each area / ward boundaries. These maps should be prepared for each team and supervisory areas by the respective trained DAs under guidance from their supervisors. This mapping exercise can be undertaken simultaneously while visiting the urban wards for family survey through field validation on the ground by the DAs.

Example: hand drawn ward map from micro -plan with team-day areas (5 Teams)

Following aspects need to be ensured for micro-plans:
- No geographical area (in villages and in urban wards) should be missed.

- All hamlets (tolas/ purwas) adjoining the village, peri urban areas, unauthorized slums, all residential schools, brick kilns, construction sites, industrial areas, nomadic sites, should be incorporated.
- Blocks or urban municipalities should be divided into small areas (villages or wards). Against the name of the drug administrators, population to be covered, contact details of drug administrators, contact details of RRT (Rapid Response Team), dates of (visits) operation and name of supervisor.
- Separate micro-plans need to be prepared for Booth and House to House activity. The medical officer of the urban PHC would be accountable for the preparation of the micro-plan of his PHC area.
- Micro-plans should indicate the day wise house numbers/number of houses to be covered or locality so that the supervisor is aware of the location of the drug administrators on a particular day.
- It should include the name of the first & last household owner for each day of activity with identifiable landmarks in the village or locality.
- Names of prominent local persons like Pradhan, panchayat members, local doctors, teachers, religious & political leaders, etc. should be incorporated, so that their help can be taken for ensuring better consumption.
- Drug Administrators will be supported by concerned supervisors/sector supervisors for preparation of micro-plans for the booth and house to house activity of their assigned areas.

Micro plan review: Once the micro plans are prepared, the respective Block Programme Manager (BPM) should review all the components of the micro plan and thoroughly check to ensure all aspects in the format are documented. Then micro plans need to be approved by MOIC. A copy of the micro plan (soft or hard) must be sent to the Civil Surgeon/CMO/CDMO/DVBDCO two weeks prior to the start of the MDA activity.

MDA Action Plan: The Block/PHC wise data is required for effective implementation of MDA. The relevant details are to be captured in the action plan such as total population of the block, number of villages, SC/ PHC/UPHC, details of the booths identified with location and DA names, total number of DA teams and supervisors with details, details of the dates for house to house, booth approach, DA and Supervisor incentives, logistics i.e. Forms/Pens/Posters/Pamphlets/Drug Administration instructions/ dose pole/ markers/Registers handouts required and IEC and social mobilization plan.

4.2.7 Social Mobilization and Advocacy

The social mobilisation and advocacy plan should be developed three months prior to the MDA at the state, district, and block levels. The detailed guidance is provided in chapter 8.

4.2.8 Micro Filaria Survey at Block/IU level

The Microfilaria survey is conducted annually for assessment of the level of the infection persisting among the human population. Since the implementation unit is block, the assessment for impact of MDA campaign would be conducted at the block level.

Night Blood Survey (NBS) is required to identify endemicity of the area and to document impact of MDA. The decision on whether to continue annual rounds of MDA will depend on the Mf results. Laboratory confirmation of diagnosis is necessary to identify asymptomatic patients and those with non-specific symptoms.

The NBS for microfilaria, should be conducted after 6 months after the completion of the last MDA round for DA (double drug) and after 9 months for IDA round (triple drug) to allow microfilaria levels to rebound from drug pressure and it should be completed 1 month before the current MDA campaign. Since microfilaria exhibits nocturnal periodicity, the sample should be collected after 10.00 pm. The NBS camp and preparations should be held accordingly with prior information to the communities about the NBS.

Selection of surveillance sites: Before the first round of MDA is implemented in any newly mapped block/ Implementation Unit, one sentinel site and one spot check /random site for that implementation unit (IU) need to be identified. These sites will be used to ascertain the baseline parasitological indicators. These surveillance sites are to be identified based on the high disease prevalence rate.

The steps to be followed for the selection of a Sentinel site or fixed sites is as follows:

- Make a list of all Health Sub Centers (HSC) in the block/IU.
- Select one HSC with the highest number of lymphoedema and hydrocele cases detected during the morbidity survey/line listing most recently conducted.
- From the selected HSC, select one village with the highest number of lymphoedema and hydrocele cases thus giving the surveillance site from the rural area.
- In case, if the block IU does not have the mapping of chronic LF cases, the selection of site would be a purposive selection. Villages with these aspects could be considered like most difficult or remotest village, poor socio-economic conditions, hard-to-reach areas, maximum refusals or where compliance was poor/ doubtful in previous rounds.
- For the urban areas, select one ward with the highest number of lymphoedema and hydrocele cases from the selected municipality/urban areas for MDA. If the data is not available, then consider the ward having the history of LF cases.

The sentinel/fixed sites which remain fixed for as long as MDA is implemented.

For **Spot check/random sites,** one site is selected randomly by making the list of all subcenters in the block and selecting one Health Sub Centre and then from the village list of that Sub Centre, select one village as site. In urban areas, select one ward randomly. The village or ward selected randomly are spot check/Random site, which is to be changed every year following the above method.

Note: From 2026-27 onwards, each block/IU will have 3 sites (one sentinel and two random sites). The site selection criteria will remain the same.

<u>Sample Size for each site</u>

To increase the sensitivity and ability to detect ongoing transmission, the survey will focus on Mf in adults (individuals 20 years of age and older). Adults are chosen as the target population because they have a higher prevalence of Mf than children. Some studies have demonstrated infections and ongoing transmission among adults when infection in children is below threshold.

The survey population should be that of the Implementation Unit. All members of the population of the site should be included, or, where the population is too large, a part of the site can be chosen. In rural areas, the village of the block can be chosen, whereas in cities or towns, a small community or segment of municipality or wards or the slum can be chosen. All adults (≥20 years) who live in the area are eligible to be tested. Pregnant and lactating women should not be excluded from the assessment.

If the population of adults in the selected site is less than 400 then every adult should be tested (census). Random sampling of adults in the selected sentinel and spot-check site is recommended for sites where the site population of adults is greater than 400. When random sampling is used, an estimate of prevalence can be generated. This is better than a convenience sample in that it can eliminate types of sampling bias which could lead to an incorrect decision of whether criteria has been met. The following methods can be used for random selection of adults:

Systematic sampling of households. A unique sampling interval is calculated for the community. Using a household listing or numbering of households, teams pick a random starting number between 0 and the sampling interval and then add the sampling interval repeatedly to the random starting number to generate the list of HHs that should be selected. All adults in each selected household should be tested.

HH sampling interval for selection of persons for NBS = (n') * (1-r) / (q)
where, n' = estimated population of adults in the site ; r = the expected non-response rate and q = desired sample size per site

Segmentation: The community is split roughly into equal segments of 100 households and 2 or 3 segments are randomly selected (the number of segments to select will depend on the number of households necessary to reach the target sample size of adults). All households in the selected segment are visited and all adults in each household are eligible for testing. If random sampling cannot be used, it is most important to ensure i) equal geographic representation of the site in the sample and ii) groups at highest risk are included in the sample.

A sample of **300 people aged 20 years and above** is to be drawn from each site for the microfilariae survey (300*2 sites). Selection of 300 people per site for night blood survey (NBS) is to be systematically randomized so that entire site is represented. In the case of villages/ urban areas of smaller size where enough samples may not be available, the required sample can be completed from adjoining villages/ urban areas of the same block/ IU.

For quality check purposes, 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%. Any discrepancies noticed during cross checking by the RD office or state labs needs to be shared with NCVBDC. The states need to ensure periodic reorientation of Lab Technicians. (LTs.)

Further, for quality assurance purpose, few slides including postive, negative, false positve and false negative to be send to National Reference Laboratory, NCVBDC, Delhi for cross checking.

4.2.9 Pre-TAS

The following criteria should be met before taking the decision to stop MDA and proceeding for pre- TAS:

- At least 5 rounds of MDA for DA and 2 rounds for IDA have been completed in the respective IU (block)
- The minimum consumption of MDA drugs must be more than 90 percent for DA and IDA against the eligible population.
- The last Mf survey must have reported <1% mf rate or <2% Antigenemia in each identified surveillance site(s) in the block / urban area.

The pre-TAS needs to be initiated immediately among the eligible blocks/IUs as per criteria. For pre-TAS three additional sites are to be selected per IU (block) following these steps:

- Two sites to be selected from the 2 most difficult or remotest villages in a block. The criteria for the selection could include poor socio-economic conditions, hard to reach areas, villages with lymphoedema and hydrocele cases, maximum refusals or where coverage and compliance was poor/ doubtful in previous rounds of MDA.
- One site is to be selected randomly from the list of total villages in the respective block.

- The sample size for each site is 300 and Target population is the general population aged 20 years and above and randomized sampling should be followed for the selection of this population for ensuring representation from the entire site.
- For DA IUs, Night Blood Survey (NBS) should be conducted.
- For IDA implementation units, FTS will be utilized initially, followed by NBS for all FTS-positive cases. A total sample of 900 would be drawn from 3 sites. **In absence of sufficient WHO-recommended RDT, night blood survey might be used for decision making in Epidemiological Monitoring Survey (EMS), provided that the programme ensure the quality of night blood survey as par global standards.**
- **While selecting these 3 sites for pre-TAS, exclude the sites (sentinel and random) that were included in NBS (Mf Survey)**

The Mf rate is calculated by taking the total positive cases from NBS and total persons tested. The formula would be as follows:

For DA IUs: Each site Mf rate % = Total +ve cases from NBS/Total persons tested (300) *100 and calculate for all three sites and if any one site reports >1 Mf rate then it will continue MDA.

For IDA IUs: Pre-TAS or epidemiological monitoring survey (EMS) is conducted using FTS among 300 persons aged 20 and above for Ag for each site and all FTS +ve are to be tested by NBS for Mf and subsequently Mf rate is calculated:

Mf rate%= Total +ve cases from NBS/ Total persons tested with FTS (excluding invalid tests) * 100

If an IU fails Pre TAS, then that IU will repeat MDA for one additional round.

The format for Mf survey, Pre TAS reporting, and calculation is attached as annexure 9.2 Table 2A and 2B. The block/IU would qualify for TAS 1 only if all 3 sites individually report <1% Mf rate.

Monitoring of the NBS and Pre- TAS.
The Mf survey activity and pre-TAS activities need to be monitored during the implementation of the NBS and check the quality of the slides collected, de-hemoglobinization, fixing and staining process. These activities need to cross checked using **the Night Blood Survey Monitoring and Post NBS activity monitoring check list NBS (Annexure 4)** by the block level supervisory teams, DVBDC, staff of National Filaria Control Units, state consultants and officers, RD office Filaria consultants and officers.

If all the sites individually report Mf <1% (based on NBS positives), then the IU is eligible to conduct TAS-1 or IDA Impact Survey (IIS). To undertake Transmission Assessment Survey (TAS), a Pre TAS must be undertaken to meet the criteria for eligibility.

The following table depicts the difference between previous and current strategies for surveillance activities.

Table 4.4 Difference between previous and current strategies

	Components	Previous Strategy	Current Strategy	Proposed Strategy
Implementation Unit	Implementation Unit	At district	At block	Block with Population up to 1.5 Lakhs will be one IU. For Population >1.5 lakhs additional IU will be formed according to popn
	No. of MDA assessment sites	4 sentinel (fixed) and 4 random	1 sentinel and 1 random	1 sentinel and 2 random
	Sample size for NBS.	500 samples from each site @4000 total slides per district	300 from each site (600 per block)	300 from each site (900 per block)
	Methodology	NBS (Mf rate)	NBS (Mf rate).	NBS (Mf rate)
	Sample population	above 2 years	20 years and above for both DA and IDA	20 years and above for both DA and IDA
	Pre-TAS Assessments	10 additional sites with sample of 500 per site through NBS (total sample 5000)	3 additional sites per block (2 sites with the highest risk and 1 random site). 300 samples per site (total of 900 samples) with NBS for DA. For IDA, FTS followed by NBS in all FTS +ves. **Note: In the absence of sufficient WHO- recommended RDT, night blood survey might be used for decision making in Epidemiological Monitoring Survey (EMS) in IDA units, provided that the programme ensure the quality of night blood survey as per global standards.**	
Evaluation Unit	Population	population of 20,00000	Population up to 500000	
	Transmission Assessment Survey	6-7 years for DA with 1800 FTS per EU	The survey in the children aged 6-7 years for DA with ~1800 sample size. 20 yrs and above for IDA with ~3150 sample size with Mf among all FTS positives.	

4.2.10 Transmission Assessment Surveys

A TAS is the base for a decision to move from MDA to post-MDA surveillance. Transmission Assessment Surveys (TAS) help evaluate whether MDA has succeeded in lowering the prevalence of infection to a level where recrudescence is unlikely to occur. In the block level strategy, the Evaluation unit (EU) size is reduced. An Evaluation unit (EU) will be constituted at a maximum of 500,000 (5 lakh) population. Wherever feasible, consider combining one or more geographically adjacent blocks that are also at the same stage of the programme and form one EU – the total population of the EU must not exceed 500,000. The following two methods are suggested for the transmission assessment:

1. **The standard TAS methodology:** It is appropriate to continue to use the standard TAS in children when the following conditions are met:
   i. MDA was delivered as a two-drug regimen (DEC + albendazole)
   ii. The total number of MDA rounds with effective coverage of >90% against eligible population and more than or equal to 5 rounds, for conducting the first TAS assessment.
   iii. All 3 sites clear the pre- TAS.
2. The **IDA IMPACT SURVEY** is appropriate and necessary for making stop treatment decisions under the following conditions
   i. For new districts conducting 2-3 rounds with IDA having effective coverage of >90% against the eligible population.
   ii. When 1-2 rounds with IDA are implemented after several rounds of DA with effective coverage.
   iii. After IDA rounds, the blocks/IU clear pre TAS assessments.

The standard TAS for DA districts will have a sample of ~1800 to 2000, however for IDA Impact Assessment the sample size will be ~3150. The Filaria Test Strips (FTS) will be used for antigenemia detection in standard TAS methodology. However, all FTS positive to be further subjected to confirmatory testing using microscopy to identify Mf (via thick blood smear) in IDA impact surveys. The TAS process has been explained in detail in TAS guidelines. For guidance on standard TAS, please visit (http://nvbdcp.gov.in/Doc/TAS-National-Guidelines-2013-14.pdf). However, the districts that have already cleared any TAS in the past with the population norm of 20 lakh will continue their assessments with same EU.

Screening is done among children of 6-7 years of age at school or in the community as feasible in standard TAS for DA and age 20 years and above for IDA Impact Assessment Survey. IDA can accelerate interruption of transmission and reduce the total number of MDA rounds required. Given the reduction in MDA rounds recommended prior to impact surveys, and the fact that IDA has little impact on reducing antigenemia levels. It is therefore necessary to use Mf as the indicator to assess IDA impact.

In each population, Mf prevalence is lowest in children compared to other age groups and is highest in adults, who have been shown to carry the highest Mf burdens and represent the greatest risk for propagating LF in the community. A lack of Mf (or antigenemia) in adults is a good indicator that there is no ongoing transmission of LF in the community. Therefore, Mf is best measured among the adult population aged 20 and above. (Source: WHO: Protocol for Conducting an IDA Impact Survey)

The survey builder will be used to find the required sample size for each EU and then to determine the critical cutoff value as well. If the results show several positives below the cut off value, then the EU can move to the post MDA phase.

Key differences of Standard TAS and IDA Impact Survey

In table 4.5 below mentions the differences in the IDA IMPACT SURVEY from the standard TAS that is used to make MDA stopping decisions when a two-drug regimen is delivered. The following table depicts the key differences between the Standard TAS and IDA Impact Survey.

Table 4.5: Key differences between the standard TAS and IDA Impact Survey

	Standard TAS	IDA Impact Survey
Target Population	Children 6-7 years; often operationalized as 'primary school entrants'	Adults, aged 20 and above
Selection of clusters	Systematic random sampling or cluster sampling of schools or communities within the EU	Random sampling of communities using probability proportionate to estimated size sampling
Selection of individuals within a cluster	Random sampling of individuals with a fixed sampling interval, using either List A or List B	Random sampling of households using a cluster-specific sampling interval
Diagnostic tests	FTS *(W bancrofti);* Brugia Rapid *(Brugia spp)*	FTS *(W bancrofti)* or Brugia Rapid *(Brugia spp)* with confirmatory testing of all positive individuals using microscopy to identify Mf (via thick blood smear)
Threshold for decision making	Average prevalence by FTS or Brugia Rapid in the EU is <2% where *Culex* is the vector (using the upper, 1-sided 95% CI)	Average prevalence of Mf in the EU is <1% where *Culex* is the vector (using the upper, 1-sided 95% CI) -AND- No single cluster has an Mf prevalence that is >1% (using the lower, 1-sided 95% CI)

	Standard TAS	IDA Impact Survey
Applying the critical cutoff value	Compare the number of observed positive results in the TAS with the critical cutoff value in the decision rule table. If the number of positives is ≤ critical cutoff, then the area "passes" the TAS.	Step 1: Compare the number of observed positive results in the TAS with the critical cutoff value in the EU Decision Rule table. If the number of positives is ≤ critical cut off, then proceed to Step 2; otherwise, the area "fails" the TAS. Step 2: Compare the number of Mf-positive results in each cluster with the Cluster Decision Rule table, if all clusters are ≤ critical cutoff then the EU "passes"

4.3 During MDA

4.3.1: MDA Drugs and Dosage

Currently, the programme follows two drug regimens: a) **Double drug:** diethylcarbamazine (DEC) + Albendazole (ALB) and b) **Triple Drug:** Ivermectin (IVR)+DEC+ALB are recommended. DEC is administered at the dose of 6 mg/kg body weight and Albendazole is given in a fixed dose of 400 mg. These two tablets are administered based on the age of the beneficiary. Ivermectin is given at the dose of 200 mcg/kg body weight, however in the programme IVR is administered based on the height of the beneficiary using dose pole as mentioned in below tables.

Table 4.6 Dosage of DEC and Albendazole for population of different age-groups

Age (in Years)	DEC		Albendazole	
	Total dose to be Administered	Number of 100 mg tablets	Total dose to be administered	Number of 400 mg tablets
2 - 5 years	100 mg	1	400 mg	1
6-14 years	200 mg	2	400 mg	1
15 and above	300 mg	3	400 mg	1

Table 4.7 Dosage of Ivermectin tablets for population of different heights

Height (in cms)	Height (in feet)	Number of 3 mg tablets to be given
Less than 90	Less than 3.0	0
90-119	3-3.9	1
120-140	3.9- 4.6	2
141-158	4.6 - 5.2	3
> 158	> 5.2	4

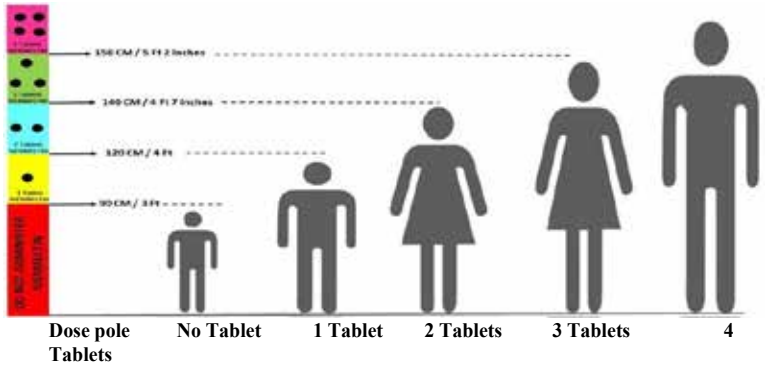


Figure 4.3 Dose pole (color coded bands) and dosage to be administered according to height of the individuals.

Children less than 2 years of age shouldn't be given tablet DEC.
Children less than 5 years or with height less than 90 cm shouldn't be given tablet Ivermectin.

4.3.2 Approaches for Drug Administration

a. **House to House Approach (H-t-H)** (to be implemented for 8-10 days): Every eligible individual will be administered the drugs at his/ her doorstep by trained drug administrators.
b. **Booth Approach:** (to be implemented for 2-3 days). To ensure MDA drugs are easily available for the eligible population at their convenience as they are not available at their houses during house-house activity. For effective implementation of the booth approach a robust planning is required with details like name of site, drugs and logistics, visibility (banner), timings, days etc.

All booths administering MDA will be identified in the planning stage and report the details as per Annexure 2. Each booth will be manned by two Drug Administrators. All efforts should be ensured for Directly Observed Consumption. Booth coverage to be recorded separately from H-t-H coverage.

Schools are effective platforms for achieving the desired MDA coverages since children are mostly missed during the house-to-house survey. It is advisable to cover the schools during the last 2-3 days of the MDA campaign, since by that time, the awareness about the campaign is well disseminated and hence the acceptance of the drugs is better. Care should be taken that children treated in schools are recorded accurately in the formats so that they are matched with family registers during the H-t-H approach. Utmost care to be given to not administer the drugs to the same child in school and household by use of indelible finger markers.

Special population groups in places like offices, industries, health facilities (public and private), medical college OPD, prisons, marketplaces, fairs, health facilities, religious places, agriculture fields, etc. – will be approached for delivery of the drugs using booths. Booths located in hospital settings, medical colleges to continue throughout the MDA campaign. Special attention will be given to reaching out to urban slums, construction sites, brick kilns, and migratory population through mobile teams. Booth Day and location should be clearly specified in the micorplans. Based on the need a Mobile team may be planned where the Booth Day will move from one place to another place for administering drugs.

Logistics required for MDA: All logistics (as per DA or IDA) must be ensured by every DA team before starting the activity every day, supervisor should also ensure all these essential items are available with the DA teams before starting the activity under their supervision as per Table 4.8

Table 4.8: Logistics for MDA

Logistics required		
Sl.No	**At booth level**	**During house-to-house activity**
1.	Micro plan for all days (with contact no of supervisor and details of RRT Team)	Micro plan for all days (with contact no of supervisor and details of RRT Team)
2.	Family register (for booth approach tally sheets will be required; for group approach participants details format required)	Family register (To track and administration of drug to them who have not taken drug till the field visit of team)
3.	Daily reporting format (including Adverse events reporting Format)	Daily reporting format (including Adverse reporting format)
4.	LF line list for updating	LF line list for updating

Sl.No	At booth level	During house-to-house activity
5.	Adequate drugs (DEC +Albendazole for MDA and Ivermectin additionally for IDA) as per requirement according to total beneficiary's quantum, (adequate drug means; DEC/Ivermectin = 2.5 X total eligible population & Albendazole = 1 X total eligible population)	Adequate drugs (DEC +Albendazole for MDA and Ivermectin additionally for IDA) as per requirement according to total eligible population (adequate drug means; DEC/Ivermectin = 2.5 X total eligible population & Albendazole = 1 X eligible population)
6.	Medical kit to tackle with adverse drug reactions	Medical kit to tackle with adverse drug reactions
7.	Table/chairs/waste disposal bags/pens/drinking water storage vessel, glasses (may be disposable), utensils cleaning material if glasses are not disposable	Pens, bag (to keep drug/formats/ Dose pole or flex measuring tape/other logistics)
8.	Availability of IEC materials (posters, banners, leaflets/flyers in English/Hindi and the local languages)	Availability of IEC materials (leaflets/flyers in English/ Hindi and the local languages for sensitization of beneficiaries/community)
9.	Indelible nail marker, Chalk/Geru for house marking	Indelible nail marker, Chalk/Geru for house marking
10.	Dose pole or flex measuring tape (For IDA only)	Dose pole or flex measuring tape (For IDA only)

4.3.3 Inauguration

MDA inauguration should be an important event, as it gives visibility to the programme. The presence of Political leaders, district magistrate, municipal commissioners/ ward members, BDOs, DEOs celebrities, community leaders, media, prominent religious leaders etc makes the event impactful. All the important dignitaries should be requested to consume drugs in presence of the media for acceptance by the communities and to allay any fears of adverse events. The media should be requested to cover the event widely for larger visibility of the programme.

4.3.4 Drug Administration

Drug administration needs to be conducted as per the micorplans. Each Drug Administrator will be responsible for drug administration in the designated areas. She/he must cover the area and ensure 100% reach and ensure Direct Observed Consumption (DOC). Drug Administrator's has flexibility of timing of work and shall be free to plan work schedule as per their convenience.

Night revisits by DA teams in Odisha

Drug Administrators should be encouraged to conduct revisits for maximum reach of households and DOC with focus on the absent members of the family. During house-to-house activities the community must be informed about the availability of the drugs at the booths. The drugs in any case should not be left with the individual or relatives for later administration. The drug consumption should be avoided empty stomach to prevent nausea and vomiting in some people, so the timing of the team visit should be planned accordingly.

The Drug Administrator should complete/update the information in the family registers immediately. The DA team should mark refusals, absentees in the family register and plan revisits to cover them.

4.3.5 Marking

Finger marking: Every person after consumption of anti-filarial drugs should be marked by the Drug Administrator on the finger as per the instruction below and **the following points should be emphasized during finger marking.**

- Finger marking should be done after the eligible person has adhered to the DOC and consumed all the drugs as per the dosage.
- Marking should be done by an indelible marker pen only, preferably on the left index finger.
- Marker pen should be capped immediately and kept in a horizontal position to prevent it from drying.

House Marking: This helps in easy identification of the houses that are fully covered, partially covered, or uncovered under MDA during the round. The Drug Administrator should mark the house after completing the administration of drugs to all the eligible members.

- House marking should be done with chalk or geru. It should be clear, visible, and readable.
- House marking should incorporate the information about house number, team number, date of visit of team, category of house (F or X), total number of eligible members, total members who have consumed the drugs and the direction of team movement of DA team.
- Mark a house 'F' when all eligible members in the house have consumed the entire course of MDA drugs under direct observation of the DA team.
- Mark a house 'X' when one or more than one eligible member didn't consume the entire course of drugs due to any reason.

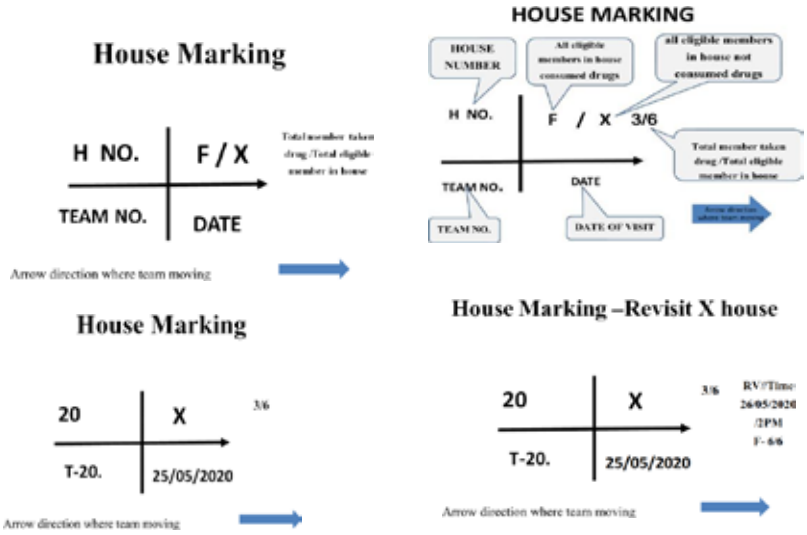


Figure 4.4: Housing Marking

Above example of house marking indicating that team number 20 visited to house number 20 which is categorized as X, on 25/05/20 and out of six eligible members, three consumed THE entire course of MDA drugs under direct observation of team and team moved forward toward right direction. House marking at the time of revisit indicates that the team revisited the house on 26/05/2020 at 2 pm and was able to convert the house to "F" (drugs were consumed by the remaining eligible family members).

4.3.6 Addressing refusals.

People and households showing reluctance to participate in and undergo treatment should be approached and informed about the safety and significance of the treatment. Supervisors play a crucial role in handholding the DAs to address refusals. The DAs should be encouraged to seek help from local influencers to convince

the refusals by responding to the queries or reasons for non- compliance. The DAs should mark the refusals in the family register and inform the supervisors if the number of refusals is huge in a particular community or geography. In urban areas, a small group or task force can be formed with 4-5 key influencers or use the existing list of influencers for immunization campaigns.

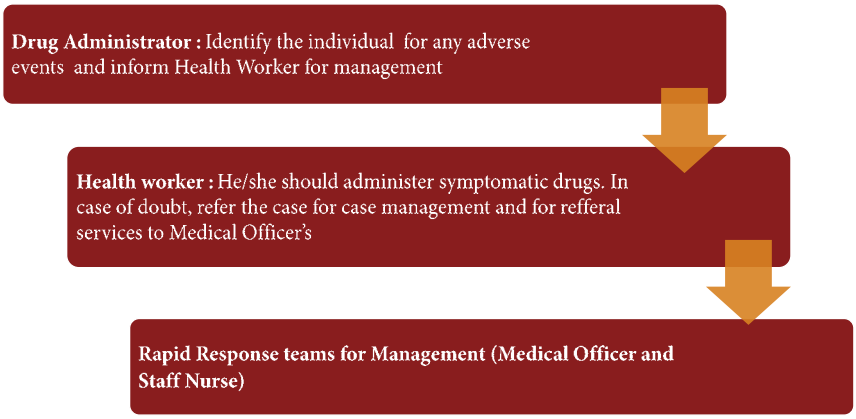
If the supervisor could not convince the refusals, they must seek help from the PHC Medical Officer. The PHC staff must visit such communities and try to convince them for DOC by addressing their concerns for refusals.

4.3.7 Adverse Events / Post Consumption Events

Drugs used in MDA either as a double drug regimen or triple drug regimen are very safe. In very few people, consuming the drugs may produce mild to moderate adverse events after MDA, serious adverse events are very rare. These drugs may produce adverse events in 1-2% of the persons consumed and most of the adverse events are self-limiting.

- Some of the commonly occurring adverse events are headache, anorexia, nausea, abdominal pain, vomiting, dizziness, weakness, or lethargy. These symptoms begin within 1-2 hours of taking the drug and may persist for a few hours.
- Specific parasite related allergic reactions due to destruction of microfilariae and adult worms include fever, local inflammations around dead worms with localized itching.
- These adverse events need to be treated with antipyretics/analgesics and anti-allergic agents. The events also disappear spontaneously with or without symptomatic treatment.

If the DA teams are unable to decide on the treatment, they should immediately call or inform the RRT. The following referral mechanism needs to be followed for management of side effects that require medical attention. If there are any adverse events reported in the field, they need to be informed and reported with the concerned PHC medical officers, district officials or committees.



Drug administrators and Supervisors should know about common side effects and assure people in community that these side effects are due to action of drug against worm in the body.

The anti- filarial drugs should not be taken on an empty stomach. Therefore, the timing of the team's visit should be planned accordingly.

There is a risk from coincidental events also. A coincidental event is an adverse event that happens during or immediately after a large-scale MDA. In certain cases, such events are falsely attributed to the drugs used in the MDA. When treating large numbers of people, there is a fair chance that any event taking place during or immediately after the drugs may be falsely considered to be 'caused' by the intervention or falsely attributed to the medicines used in MDA. If necessary, investigating such cases is very important to enable programme

managers to respond to a community's concerns, to dissipate public fear and maintain the credibility and confidence in MDA. Generally, severe adverse event is very rare, but if there are any instances reported of prolonged hospitalisation of more than 24 hrs duration or any death reported in the field (causal or non-causal) which may or may not be related to the MDA, they need to be properly investigated by the concerned district officials or pharmacovigilance committee members for further verification of the cause. **The details of post consumption events need to be updated in the annexure 9.8, Table 8**.

Rapid Response Teams (RRTs): For each MDA district/Implementing Unit, rapid response teams should be formed during pre-MDA period. The RRT should be trained on the safety of MDA drugs and should be provided with all necessary medicines and other tools to deal with any drug reactions. The team should comprise of minimum one medical officer supported by a staff nurse/ANM and a pharmacist. The medical officers of Rashtriya Bal Swasthya Karyakram (RBSK) can also be considered as RRT member. The district and block should prepare the list of RRT teams before MDA and details need to be included in the micro plan after proper training.

Whenever there is a need for transporting such cases to health facilities, the referral transport under NHM is to be utilized. In the event of any adverse events, the DAs should immediately inform the sector DA, team supervisors, and note down adverse events in the family register.

4.3.8 Urban Strategies

Successful conduction of MDA in urban areas is a challenge, it is essential to have focus on urban areas. This is because urban areas encompass a diverse range of populations, including high-rise buildings, gated colonies, resettlement areas, and densely populated areas. Together with the huge population that must be covered in these areas, it is suggested to conduct Mf survey as per revised IU strategy and finalize the areas that require MDA, in the areas reporting Mf >1. Further, Municipal Commissioners to be included during the review meeting since their insights and authority are essential for ensuring comprehensive and impactful MDA in urban localities.

The urban strategies mostly remain the same as in rural areas. The challenges in urban areas differ in terms of acceptance of drugs, mobilization of communities, deployment of accountable staff. However, the program should be well prepared with advanced planning, meticulous micro plans to avoid missed areas, robust mobilization plan with intensive IEC. For ensuring accountability and optimum compliance, it is essential to engage UHC, Municipal authorities (health and Swachh-Bharat), CSR bodies.

Engage NGOs or other institutions for awareness and IEC activities. Private clinics and hospitals should be effectively engaged through Rotary and IMA in setting up booths. The Resident Welfare Associations to be approached for residential complexes, booths to be established in marketplaces, malls, and office for better compliance to MDA drugs.

In urban areas, as most of the DAs are volunteers so the following aspects need to be considered:

- Identification and training need to be completed at least 10 days prior to MDA.
- The existing urban staff from Ayushman Arogya Mandir/Urban PHC/ICDS peripheral health staff to be identified and selected, in addition, local volunteers, Nursing students can also be engaged for MDA implementation.
- Engage one experienced DA along with a newly identified DA.

Supervisors and Sector Supervisors plan must be submitted to the Block PHC along with the micro plan before starting MDA. District and state supervision plans need to be submitted. In addition, for effective monitoring in Urban areas the following committees need to be formed. A special urban task force should be formed under the chairmanship of the Municipal Commissioner. The members of the task force should include CMO/ACMO NUHM, Municipal health officer, nodal person from medical college/nursing college, IMA and IAP representatives, representatives from local clubs, NGO/CSR to ensure proper planning, monitoring with periodic reviews for mid-course correction.

The first meeting of the urban task force should be held at least two months prior to the start of the campaign. The second meeting should be held one month after the first meeting to monitor the progress in preparedness. The task force should review the MDA campaign at least once during the MDA for required mid-course correction. The final review of the MDA campaign must be undertaken by the urban task force one week after the campaign is completed.

4.3.9 Mop-up activities

It is very important to carry out mop up activities to increase the drug compliance which should be at least 90% of the eligible population. Mop-up activities should be planned meticulously so that left out households & missed areas get covered to maximize drug consumption. Mopping-up activity should be planned for five days following the last day of drug administration so that the left-out households, poorly covered areas in rural/tribal/urban and missed areas identified during team visits, supervisory visits, and rapid convenience monitoring (RCM) may be taken up, to maximize drug consumption, in the urban and rural population. The same drug administrator's teams implementing House to House Survey will conduct mopping up operations in areas with low coverage and left out/missed areas, the supervisory staff should also assist the teams to improve the drug consumption/compliance. Data from the Mop-up activity should be added to the final MDA coverage report before submission to the district and state.

MDA Coverage

MDA coverage determines the effectiveness and success of the MDA programme and thereby success of the programme to eliminate LF. Each eligible individual in the community should be administered drugs during MDA round. The target for effective coverage should be more than or equal to 90% across DA blocks and IDA blocks amongst the eligible population.

The Effective coverage for a block or IU is calculated as:
No. of people consumed LF drugs through Directly Observed Consumption in the IU X 100
Total Eligible Population of the IU

4.3.10 Data Recording and Submission of Information

All DAs/ASHAs shall ensure the timely completion of all the requisite reports. They are supposed to record data in the prescribed family register for the consumption of drugs, and in the format for the line listing of the LF cases. Supervisors shall be responsible for the collection of reports from their respective DAs and submission of these reports daily to the PHCs/UPHCs. Supervisors and Sector Supervisors shall also compile their action taken report (based on their daily supervision) and submit it to the PHC/UPHC. The supervisors will put their signature/ initials in the family register, wherever they have cross verified the reported beneficiaries. At

the block level or IU level, the data will be daily uploaded on the LF- IHIP portal. At the district programme office, all the data and reports received from all PHCs should be processed and a coverage report prepared and submitted to the state programme office daily. The final block wise coverage reports are to be prepared and submitted to the state program office immediately after completion of the mop up campaign.

4.4 Post MDA

MDA Coverage Evaluation Surveys: The CES shall be conducted by medical colleges/WHO/ICMR/academic institutes immediately after completion of mop up activities and completed within a month of completion of MDA. The details on CES are mentioned in chapter 10.

Chapter-5

DIAGNOSTIC TOOLS

- In *W. bancrofti* endemic areas - primary diagnostic tools used in mapping, impact assessment and stopping MDA decision include Microfilaremia testing or Assessment of circulating filarial antigenemia using Filariasis Test Strip.
- In *B. malayi* endemic areas - primary diagnostic tools used in mapping, impact assessment and stopping MDA decision include Microfilaremia testing or Filarial antibody detection using Rapid test.
- In Microfilaremia testing-Blood films (20-µl thick) are prepared to detect the presence of microfilaremia.

5.1 Introduction

Diagnostic tools play important role in the programmes to eliminate LF because they are critical to map the LF endemic areas and decide whether to implement MDA or not, measure the impact of MDA and assess post-MDA transmission to stop MDA and the resurgence of LF infection. Until recently, the choice of diagnostic methods was limited to detection of microfilaremia in peripheral blood or clinical examination of community members for chronic disease conditions. However, during the last 20 years there have been tremendous advances and new immunodiagnostic methods have emerged. The high sensitivity and specificity of immunodiagnostic methods have enabled the LF elimination programmes to measure the LF infection prevalence and incidence accurately and make programmatic decisions robustly.

The primary diagnostic tools used in mapping, impact assessment and stopping MDA decision include Microfilaria testing and circulating filarial antigenemia (CFA) tests. Those used in post-TAS surveillance include Antibody testing and xenomonitoring. Currently, the most used diagnostic tools are assessment of CFA or microfilaraemia in *W. bancrofti* endemic areas and antibody testing or Mf testing in *B. malayi* endemic areas. Mf testing is performed through night blood sample collection from community members (as *W. bancrofti* and *B. malayi* in India are mostly nocturnally periodic) and thick smear examination in the laboratory. Earlier CFA was assessed using ICT card. This was recently replaced with an improved version, FTS. Antibody levels in *B. malayi* endemic areas is assessed using Brugia rapid test. The commonly used diagnostic techniques - Mf testing method, CFA assessment using FTS and antibody testing using Brugia rapid test are described below.

5.2 Blood testing for Mf

Detection of Mf in peripheral blood is the gold standard method for the diagnosis of LF infection in community members. The blood samples are mostly collected depending on the periodicity of Mf. The Mf of both *W. bancrofti* and *B. malayi* exhibits nocturnal periodicity in all endemic areas in India (except in the Andaman and Nicobar Island, where Mf exhibit diurnally sub-periodic pattern).

Hence, blood samples should be collected during nighttime, when the density of Mf is high in peripheral blood. Although the Mf density peaks during midnight hours, blood samples are collected from individuals aged 20 years using systematic random sampling covering the households of that village and above only between 10 pm and 12 am. Prior to the Mf survey, community members need to be informed about the survey and make it an event by engaging local and influential people for mobilizing the community to participate in the NBS activity.

5.2.1 Preparation of a Blood Smear for LF Microscopy

The smear for LF microscopy is made from 20 microliter (4-5 drops) collected through finger prick. The smear is made at night between 10 pm and midnight.

Equipment required:

- Clean glass slides.
- Disposable lancets.
- Spirit or anti-septic solution.
- Small bottle with cork for keeping spirit or anti-septic solution.
- Slide box for 25 or 50 slides.
- Glass marking pencil.
- Lead pencil.
- Register and Survey forms.
- Ball point pen.
- Emergency light
- Buffer water
- JSB-1 Stain/Giemsa Stain
- 2% acid alcohol (2 parts of concentrated hydrochloric acid and 98 % of methanol by volume)
- Immersion oil
- Microscope (low power (X10) and high power (X100), oil immersion lens objective)
- Packing paper and rubber band.

Method and steps to follow:

First Step

- Select third/ring finger of the left hand of the person.
- With the palm facing upward hold the left finger between thumb and forefinger at the first phalangeal joint.
- Wipe fingertip with a swab dipped in spirit or anti-septic solution.
- Allow the fingertip to dry.

Second Step

- Hold the lancet in right hand and prick the finger using quick rolling action.
- Allow blood drop to ooze.

Third Step

- Take a clean slide.
- Apply gentle pressure, take 4-5 big drops of the blood (20 microliter) in the centre of the glass slide.

Fourth Step

- Take another clean slide with smooth edges and use it as a spreader.
- Use the corner of the spreader, quickly join the larger drops of blood, and spread to make a thick oval film. (20mm wide and 30 mm long)
- Put the slide number on the glass slide with glass marking pencil.
- Allow it to dry flat.

Fifth Step

- Place the slide in clean slide box or wrap the dry slide in a clean paper.

Sixth Step

- On the following day, re-write the same slide number with lead pencil in the middle of the smear before dehaemoglobinisation.

Staining and Examination of Blood Smears: Blood Smears should be dehaemoglobinised and stained preferably within 24 hours. The smears prepared during the preceding night should be stained during the next day and not later than 48 hours.

Method and steps

Step 1 - Dehaemoglobinisation

- Put the dried smears in a jar/beaker containing clean water for 3-5 minutes.
- Again, flush the thick film by pouring water with the help of dropper.
- Take out smears and let them air dry.

Step 2 - Fixing

- Dip each smear completely in a jar/beaker containing 2% acid alcohol (2 parts of conc. HCL and 98 parts of methanol by volume) for a second.
- Let the smear air dry.

Step 3 - Staining

- Dip the slide in a jar or beaker containing JSB-1 Stain (40-60 seconds)/Giemsa Stain (45 minutes).
- Wash the smear with buffer water/tap water in beaker/jar.
- Allow the slide to air dry.

- Water for washing the blood smear should be filtered before use with ordinary filter paper to remove any suspended particles.
- Do not use the used slides.
- A 50 ml beaker containing JSB-I can stain 60-70 slides. The solution should be discarded after staining 60-70 slides and not reused or mixed with the stock solution.
- Buffer water should be changed when the colour of the water changes to light blue.

A GOOD QUALITY-STAINED SMEAR

- Has a bluish translucent background.
- No RBCs are seen. Only a faint cell outline may sometimes be visible.
- Stained platelets, WBCs and parasites are seen.

An experienced technician can stain about 60 smears, which takes about one hour and 15 minutes, and examine nearly 75 slides in a day. Examine the preparation under the microscope.

Use the 10x objective to locate the microfilariae. If Mf or any other object is visualized switch to 100x oil objective for better visualization. and identification of species. The complete smear should be visualized. to record the number of microfilariae in the smear.

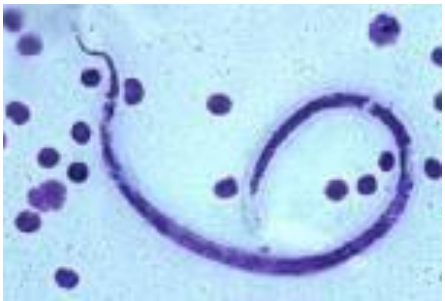


Figure 5.4: Microfilaria of W. bancrofti

The following are the differences between Mf of *W. bancrofti and B. malayi*

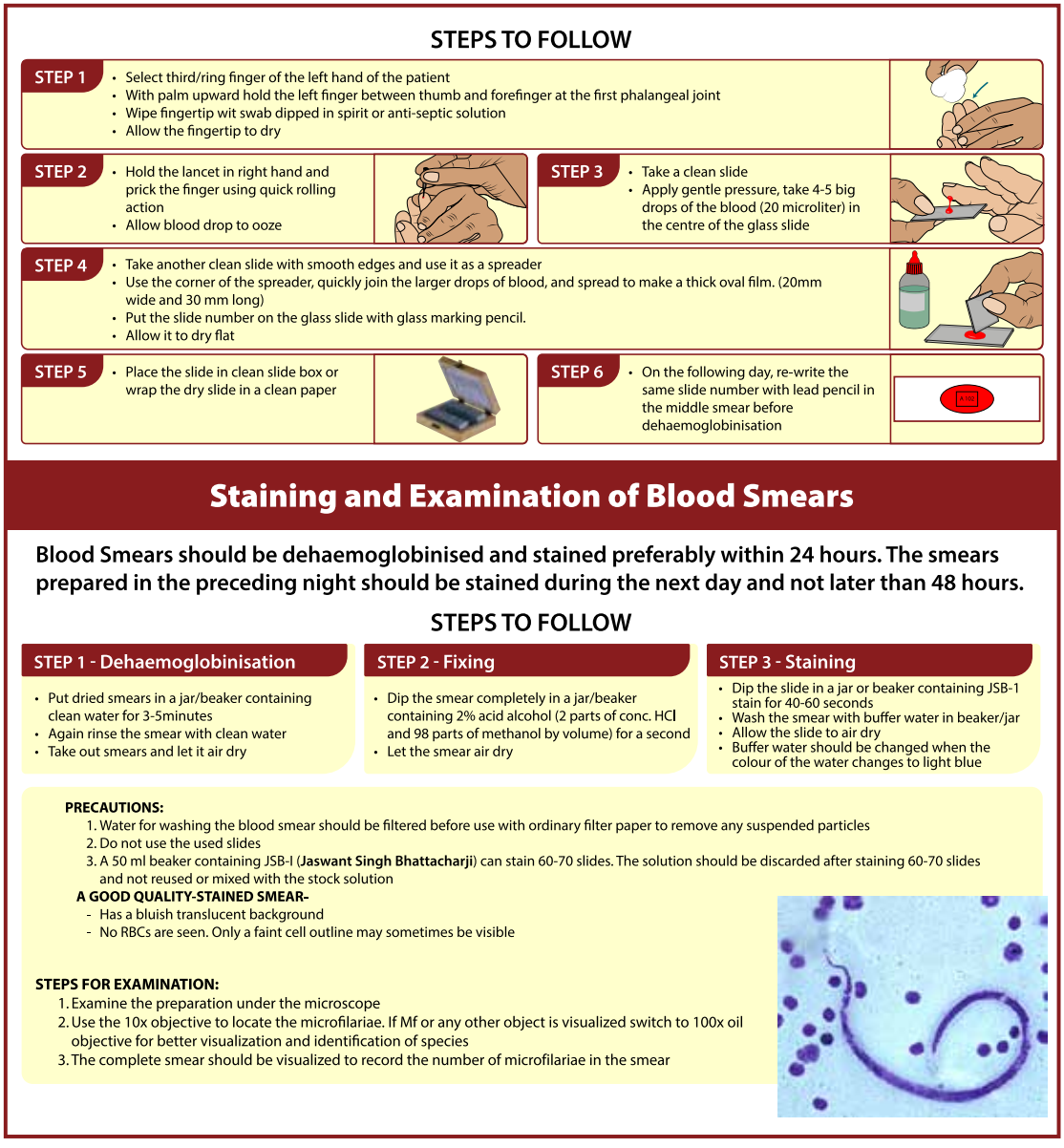
W. bancrofti	*B. malayi*
Sheath present	Sheath present
Mean length 260u (range 244-296u)	Mean length 220u (range 177-230u)
Tail tapers to a point	Tail tapers and swollen at caudal nuclei
Caudal nuclei absent	Caudal nuclei present

Advantages of LF microscopy

- It is a cost-effective technique, long practiced, and Mf surveys require less training.

Disadvantages of LF microscopy

- Blood samples need to be collected in the nighttime; hence people's cooperation is poor and it is a cumbersome procedure.
- It takes at least 1-2 days to know the result.
- The sensitivity is poor and detection of low-density Mf carriers are often miss, leading to underestimation of the LF infection prevalence.



5.3 CFA assessment using FTS

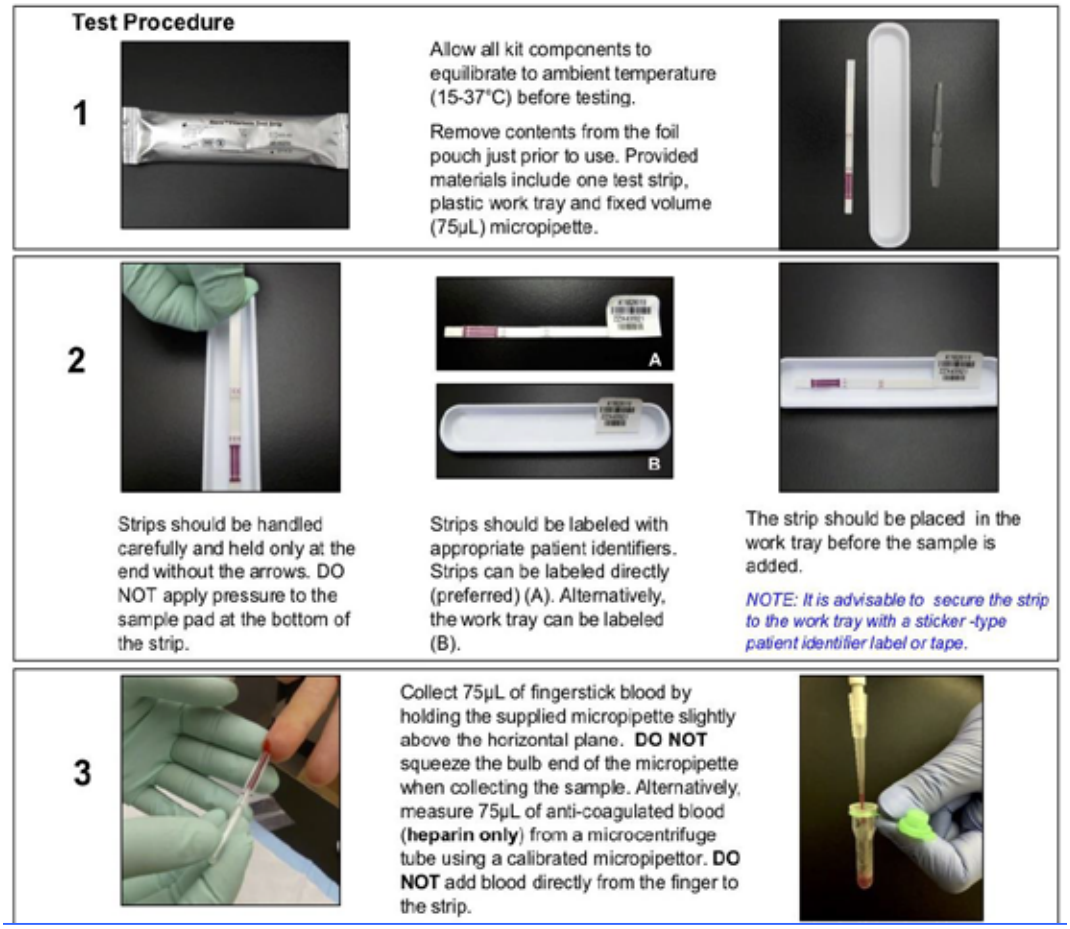
The Filariasis Test Strip (FTS) is a qualitative, point-of-care diagnostic tool that detects *wuchereria bancrofti* CFA in human blood, serum, or plasma. The Global Programme to Eliminate Lymphatic Filariasis employs the FTS for mapping filariasis-endemic areas and assessing the success of elimination efforts. This is currently the most widely used method in the programmes to eliminate LF. The required blood sample can be collected at any time, and this makes conducting the surveys easy. The following charts depicts the testing procedure and interpretation of FTS are shown below:

Filariasis Test Strip

The FTS is a rapid diagnositc tool used for the qualitative detection of *wuchereria bancrofti* antigen in human blood samples collected by fingerstick. Although the test is relatively simple to use, adequate training is necessary to reduce inter-observer variablity and to reduce the misreading of stripts.

Basic Guidelines

i. Kits should be stored at 2-37°C. Test strips should NOT be frozen. The Filariasis Test Strip kit is stable until the expiration date marked on its outer packaging when stored as specified. Kits should NOT be used past the expiration date.
ii. Before beginning field surveys, two strips from each lot of kits should be tested using a positive control that can be obtained from the Filariasis Research Reagent Repository Center (www.filariasiscenter.org). DO NOT use strips that are negative when tested with the control.
iii. When transporting strips for use in the field, a cool box is not required. However, care should be taken not to expose strips to extreme heat for prolonged periods of time.
iv. Strips must be read using bright unfiltered light. Faint lines can be difficult to see when lighting is not adequate. This is especially important when reading strips at night.



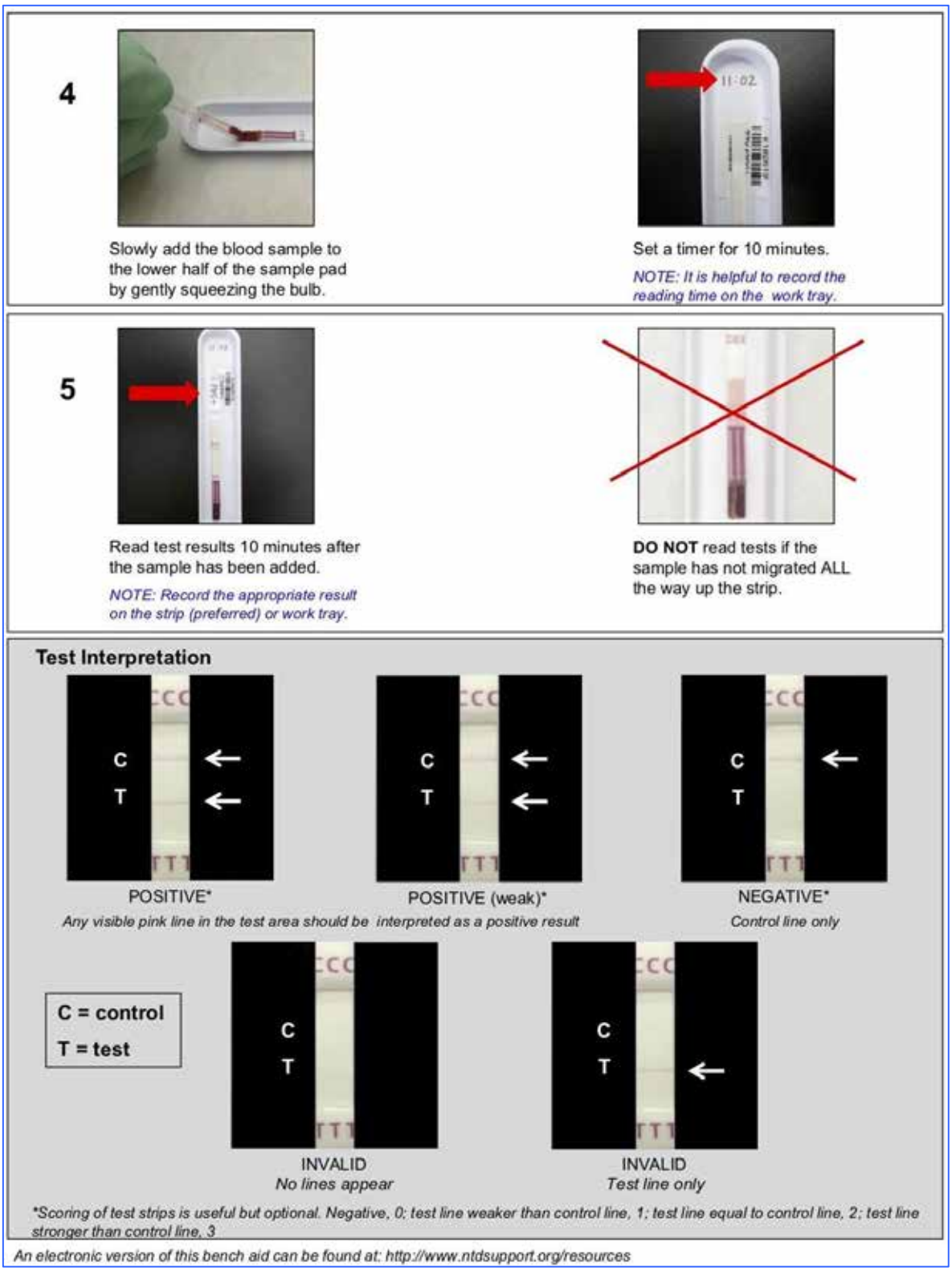


Figure 5 .5: Chart showing the use of Filaria Test Strip

Advantages

- The sensitivity and specificity of the test is very high.
- This is a point of care test, and the result is obtained within 15 minutes.

Disadvantages

- It is an expensive method.
- Supplies are often not readily available.
- Often, the quality of some batches of the test kits are sub-optimal.

5.4 Antibody assessment using Brugia rapid test.

Brugia Rapid Test is a rapid dipstick test lined with a *Brugia malayi* recombinant antigen and is widely used for mapping and monitoring and evaluation and surveillance purposes in *B. malayi* endemic areas (WHO, 2011). Charts showing the use of BRT test are shown below.

Basic Guidelines

i. Cassettes are currently known to have a limited shelf life at ambient temperatures (18 months at 25°C) but longer shelf life when stored at 4°C (approximately 24 months). Cassettes and buffer solution should NOT be frozen.

ii. Thirty-five microliters of blood should be collected by finger prick into a calibrated capillary tube coated with an anticoagulant (EDTA or heparin). Alternatively, finger prick blood can be collected into a microcentrifuge blood collection tube coated with either EDTA or heparin.

iii. Although not required, transporting cassettes for use in the field in a cool box is recommended. Care should be taken not to expose cassettes to extreme heat for prolonged periods of time.

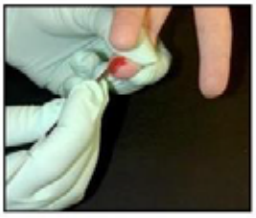
iv. Cassettes must be read using adequate lighting. Faint lines can be difficult to see when lighting is not adequate.

Test Procedure

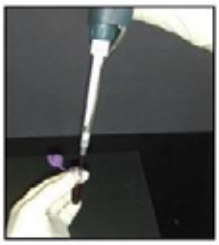
1

Bring test cassette and chase buffer to room temperature. Remove cassette from foil pouch just prior to use. Label the cassette with sample information.

2



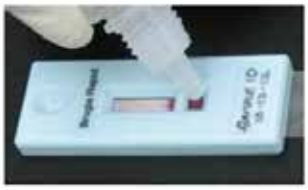
Collect 35µL blood by finger prick using a calibrated capillary tube OR measure 35µL of blood from a microcentrifuge tube using a micropipettor. **DO NOT** add blood directly from the finger to the cassette.



3

Add blood sample slowly to the square well by touching the capillary tube or pipette tip to the sloping side of the square well.

NOTE: If using serum or plasma, only 30µL is needed.



Add one drop of chase buffer to the same square well.

NOTE: If using serum or plasma, no chase buffer is required after adding the sample to the square well.

The sample will start to flow up the strip. The cassette can be tapped gently on the table to facilitate the flow. Wait until the sample has reached the blue line (A).

NOTE: If the sample does not reach the blue line (A) after four minutes, but has reached the area of line B, proceed to the next step.

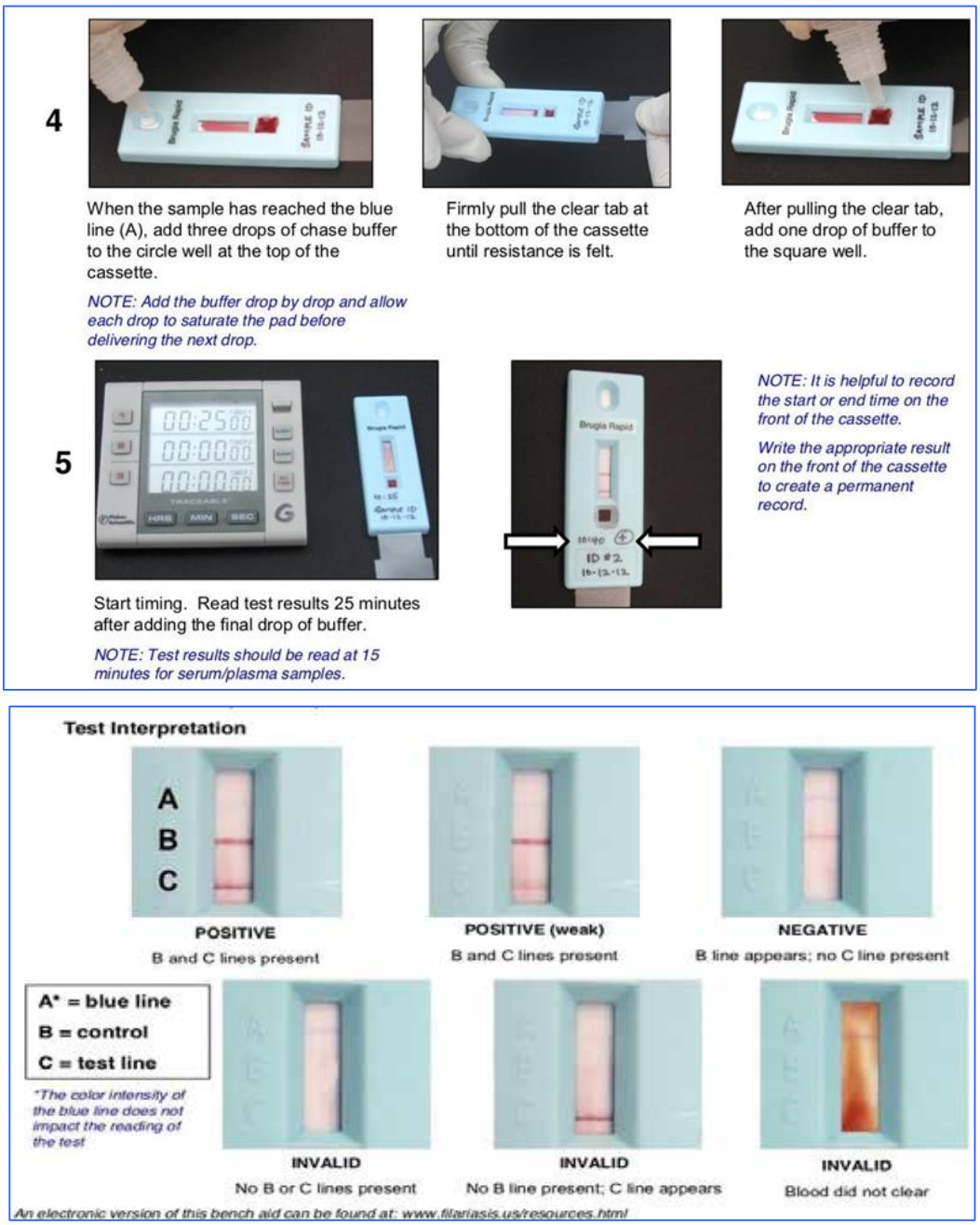


Figure 5.6 Chart showing the use of Brugia Rapid Test (BRT)

In 2022, a multicentric evaluation was carried out and found inconsistent results and variability between lots. WHO recommended the temporary discontinuation of the use of BRTs until the quality is improved. For Burgia Impact Survey please refer to the WHO interim guidelines as below

Areas with only Brugia			*Brugia and Bancrofti mixed areas*
TAS1	*TAS2*	*TAS3*	
Continue MDA until quality rapid test kits are available; Or Conduct a Brugia Impact Survey (BIS). If passed BIS, stop MDA.	Postpone TAS2 until quality rapid test kits are available. If the TAS2 is carried out with BRT, 4 or more years after the last MDA, it can be considered a TAS3.	Postpone TAS3 until a quality rapid test kit is available.	Conduct a TAS with FTS in schools (Wb) and take night blood samples (Bm) from adults in the villages where the schools are located; or Conduct a BIS.

Chapter-6

EARLY DIAGNOSIS AND TREATMENT OF LYMPHATIC FILARIASIS

- Lymphatic filariasis has a wide range of clinical expressions, with most infected individuals showing no symptoms.
- Even asymptomatic cases often exhibit subclinical lymphatic dilation and dysfunction caused by adult filarial worms.
- Filarial lymphadenopathy is common in infected children, and adult worms can be detected before puberty using ultrasonography.
- Death of adult worms triggers acute filarial lymphangitis, primarily in the limbs, leading to mild systemic symptoms like headache or fever.
- Tropical pulmonary eosinophilia (TPE) syndrome, marked by cough, fever, and eosinophilia, occurs without peripheral microfilaremia, primarily affecting men aged between 20 to 40.
- Disease manifestations appears commonly over 10 years of age. The infection increases with age reaching a peak between 20 and 25 years.

6.1 Introduction

The clinical expression of lymphatic filariasis varies considerably. Filarial lymphadenopathy is seen commonly in infected children; before puberty, adult worms can be detected by ultrasonography of the inguinal and axillary lymph nodes and vessels. Death of the adult worm triggers an acute inflammatory response, which progresses distally (retrograde) along the affected lymphatic vessel, usually in the limbs and is termed acute filarial lymphangitis. If present, systemic symptoms, such as headache or fever, are generally mild. The disease spectrum of LF ranges from the initial phase of asymptomatic microfilaremia to the later stages of acute, chronic, and occult clinical manifestations.

In post pubertal males, adult *Wuchereria bancrofti* organisms are found mostly in the intra-scrotal lymphatic vessels and can be visualized on ultrasound examination. Inflammation resulting from adult worm death, in this area, may present as funiculitis, epididymitis, or orchitis. A tender granulomatous nodule may be palpable at the site of the dead adult worms.

Cough, fever, breathlessness, and wheezing with marked eosinophilia, high serum immunoglobulin E concentrations, and positive anti-filarial antibodies are manifestations of the tropical pulmonary eosinophilia (TPE) syndrome. Peripheral microfilaremia is absent in patients with TPE. Most cases of TPE have been reported in long-term residents from Asia. Men 20 to 40 years old are mostly affected.

The filarial infection usually starts in children and a vast majority of infected people remain asymptomatic (Asymptomatic Mf carriers), but virtually all of them have subclinical lymphatic damage (lymph vessel dilatation). Disease manifestations appears commonly over 10 years of age. The infection increases with age reaching a peak between 20 and 25 years. The early symptoms and signs of lymphatic filariasis may vary depending on the stage of the infection.

6.2 Pathogenesis and Pathology

The pathology associated with lymphatic filariasis results from a complex interplay of the pathogenic potential of the parasite, the immune response of the host, and external ('complicating') bacterial and fungal infections.

Genital damage (specifically hydrocele) and lymphoedema/elephantiasis are the most recognizable clinical entities associated with lymphatic filarial infections. There are much earlier stages of lymphatic pathology and dysfunction whose recognition has only recently been made possible through ultrasonographic and lymphoscintigraphic techniques. Ultrasonography has identified massive lymphatic dilatation around adult filarial worms. This dilatation can extend several centimetres beyond these worm "nests". The adult worms although in continuous vigorous motion, appear to remain 'fixed' at characteristic sites within lymphatic vessels. The disease manifestations and management are explained in more detail in Chapter 8 (MMDP).

6.3 Asymptomatic Presentations

Less than half the individuals with lymphatic filariasis appear clinically asymptomatic although they have microfilariae circulating in their blood. However, nearly all have hidden damage to their lymphatic systems (as evidenced by lympho-scintigraphy), and/or renal systems (microscopic haematuria and/or proteinuria), and possible other systems. This state of asymptomatic microfilaremia is associated with a highly down-regulated immune system. It is unclear how, when, or even whether these individuals will progress to develop one of the more overt clinical manifestations of filarial disease.

6.3.1 Stages and identification of Symptoms

Most infected people have no symptoms and they do not know that they have LF unless tested. At least half of all patients with LF are asymptomatic people. These asymptomatic infections gradually cause damage to the lymphatic system, kidneys, and disturbance in the body's immune system, and this is directly linked to the efficiency of the patient's immune and may have acute inflammation of lymphatic vessels with high temperatures, chills, body aches, and swollen lymph nodes. Excessive amounts of fluid may accumulate in the affected tissues.

The common indicators to identify early cases with lymphatic filariasis:

1. Asymptomatic Stage:
In many cases, individuals infected with lymphatic filariasis may not exhibit any symptoms. However, the presence of the following signs may suggest an infection:

- Mild fever
- Generalized body aches.
- Fatigue and weakness
- Swollen lymph nodes

Lymphatic filariasis symptoms are caused by adult worms.

2. Acute Stage
Early in the infection, people may have symptoms for 4 to 7 days. They may have a fever, swollen lymph nodes in the armpits and groin, and pain in the limbs and groin. Pus may collect in a leg and drain to the skin's surface, resulting in a scar.

Bacterial infections of the skin and tissues under the skin are more likely because the worms block the lymphatic vessels which makes the immune system less able to defend the skin and adjacent tissues from bacteria. Often, symptoms resolve, then recur. They are more severe when people are exposed to the infection for the first time.

Some individuals may experience an acute inflammatory reaction called "acute filarial lymphangitis" during which the lymphatic vessels become inflamed. Symptoms during this stage may include:

- Severe and recurrent episodes of fever.
- Pain and swelling in the limbs, genitalia, breasts, or scrotum.
- Redness and warmth of the affected area.
- Headaches and migratory joint pains.

3. Chronic Stage:

If left untreated, lymphatic filariasis can progress to a chronic stage. It's important to note that symptoms may vary among individuals, and not all infected individuals will develop chronic manifestations. If you suspect lymphatic filariasis or have been exposed to mosquito bites in endemic areas, it is crucial to seek medical attention for proper diagnosis and treatment.

The following steps needs to be considered for early screening/identification of lymphatic filariasis based on fever cases and early symptoms:

Step 1: Assess the presence of fever: If the individual exhibit fever and is from LF endemic region or has a travel history to LF endemic area, lymphatic filariasis may be suspected.

Step 2: Evaluate for early symptoms: Check for the presence of mild fever, generalized body aches, fatigue, weakness, and swollen lymph nodes. **If these symptoms are present, proceed to the next step**.

Step 3: Rule out other potential causes of fever: Since lymphatic filariasis is not the only condition that can cause these symptoms, it is important to rule out other possible causes of fever such as viral infections, bacterial infections, or other inflammatory conditions.,

All the fever cases need to be evaluated as per the duration of fever (greater or less than 14 days). Any fever with more than 14 days needs to evaluate for Kala-azar, Tuberculosis, Typhoid etc. If fever duration is less than 14 days, must undergo a Malaria test and evaluate for the symptoms of other diseases like Dengue, Chikungunya, Japanese Encephalitis, Leptospirosis, Scrub typhus etc. If any disease symptoms are present, proceed with the diagnostic test as applicable.

Step 4: Assess specific indicators of lymphatic filariasis: If the individual has persistent or recurring fever along with pain and swelling in the limbs, genitalia, breasts, or scrotum, it may indicate acute filarial lymphangitis.

Step 5: Seek medical attention: If there are persistent or concerning symptoms, it is important to consult a healthcare professional or visit nearest health facility/HWC for further evaluation and proper diagnosis. Diagnostic tests, such as night blood test to detect microfilariae or antigen tests (FTS), can confirm the presence of lymphatic filariasis.

All Mf positive cases confirmed by NBS or FTS test would be treated with Directly Observed single dose of DA or IDA as per the MDA schedule, followed by standard DEC of dosage 6mg/Kg body weight daily for 12 days to be consumed after the meal. Each positive case to be followed up with repeat testing for every 6 months (if positive) to be done till they are Mf negative. This would prevent any chronic manifestations later.

6.4 Diagnostic methods for detection of early stages of Lymphatic filariasis

The diagnosis of filariasis can be done by different methods such as follows:

Blood tests: Blood counts are done, especially the eosinophils. Since lymphatic filariasis does not always result in clinical symptoms, the most accurate way to determine if someone is infected is a blood test. In most parts of the world, the parasites have a "nocturnal periodicity" that restricts their appearance in the blood to only the hours of 10.00pm - 12am. Therefore, the diagnosis of lymphatic filariasis traditionally has depended on the laboratory examination of blood taken between 10pm and 2am when microfilariae are most common in peripheral blood. Identification of the type of microfilariae is done according to the characteristics of the stage larva (L3) in human, such as the number and position of caudal nuclei, cephalic space, and the presence or absence of sheath.

Identification of microfilariae in a urine and hydrocele fluid: This is done by centrifuging the fluids samples, the resulting deposits are put on a slide, and examined under the microscope.

Antigen detection: Circulating filarial antigen (CFA) detection should be used for diagnosing the most common *Wuchereria bancrofti* infections using The Filariasis Test Strips. The specificity of this assay is excellent, and the sensitivity is greater than that achievable by the earlier parasite-detection assays. All individuals with microfilaremia also have detectable circulating antigen, as do a proportion of those microfilaraemia individuals with clinical manifestations of filariasis (e.g., lymphoedema or elephantiasis) but have no circulating microfilariae. In addition, some individuals who appear normal also have detectable circulating antigen that disappears after effective treatment for these cryptic infections.

Unfortunately, no antigen test is currently available for brugian filariasis although an antibody test (Brugia Rapid test) does exist, and this is in fact useful for detecting the presence of actual and or previous infection and is useful in the community diagnosis.

Clinical Diagnosis: Many lymphatic filariasis patients are microfilaraemic, and because no serologic test other than that detecting CFA is specific, in the absence of antigen testing the diagnosis of these infections must be made 'clinically' (i.e., on circumstantial evidence) with support from antibody or other laboratory assays.

Imaging Techniques

X-rays Diagnosis: Conventional X-rays are rarely helpful in diagnosing lymphatic filarial infection, except in the case of tropical eosinophilia where the picture can be variable but characteristically includes interstitial thickening and diffuse nodular mottling in the lung fields.

Ultrasound: Ultrasound examination of the lymphatics (especially scrotal lymphatics in men, and the breast and retro-peritoneal lymphatics in women) can reveal rapidly moving ("dancing") adult worms.

Lymphoscintigraphy: lymphoscintigraphy, though not diagnostic of filarial infection, can identify lymphatic functional and gross anatomical abnormalities.

Biopsy: In situations of lymphadenopathy with or without accompanying inflammation of the nodes or lymphatic vessels, biopsy can often detect adult worms, but this approach is rarely used as a diagnostic procedure.

Advances in diagnosis and treatment

Sustained LF research led to the development of new diagnostics, treatment regimens and morbidity management measures. Highly specific and sensitive antigen based diagnostic methods were refined and standardized and commercialized, which eased the challenge of night blood sampling for diagnosis of infection. Subsequently, antibody based diagnostic methods were also developed. Until recently, BinaxNOW Filariasis was the only immunochromatographic test (ICT) commercially available against Bancroftian filariasis infection. A new point-of-care rapid diagnostic test -Filariasis Test Strip (FTS) - is designed to detect in human blood the Ag of W. bancrofti.

The FTS has been evaluated in different countries and is now being used in mapping, monitoring, and evaluation activities. FTS Kits are used for Transmission Assessment Survey activity and Night Blood Survey activity are used for blood slide examination. The Brugia Rapid™ test detects antibodies to Brugia malayi and B. timori. Infected people have elevated levels of antibodies, but the results of antibody testing do not distinguish between current and past infection. However, detection in children demonstrates recent infection.

6.5 Treatment of all Mf and Ag positive cases and Algorithm for Management

The positive cases that are detected in the health care facilities or during NBS surveys and TAS surveys, need to be treated with Directly Observed Single dose of DA or IDA (Day 1) as per the MDA schedule, followed by standard treatment with DEC of dosage 6mg/Kg body weight daily for 12 days to be consumed after the meal and ensure follow up of such cases.

All the family members of the Mf positive cases and their immediate neighborhood are also to be screened (30-40 households) for Mf by NBS/FTS and all +ve cases need to be followed up for 2 years. NBS of all the Mf positive cases need to be repeated every 6 months till the time the individual is negative for Mf.

The format for compiling the information is attached in **Annexure 5.**

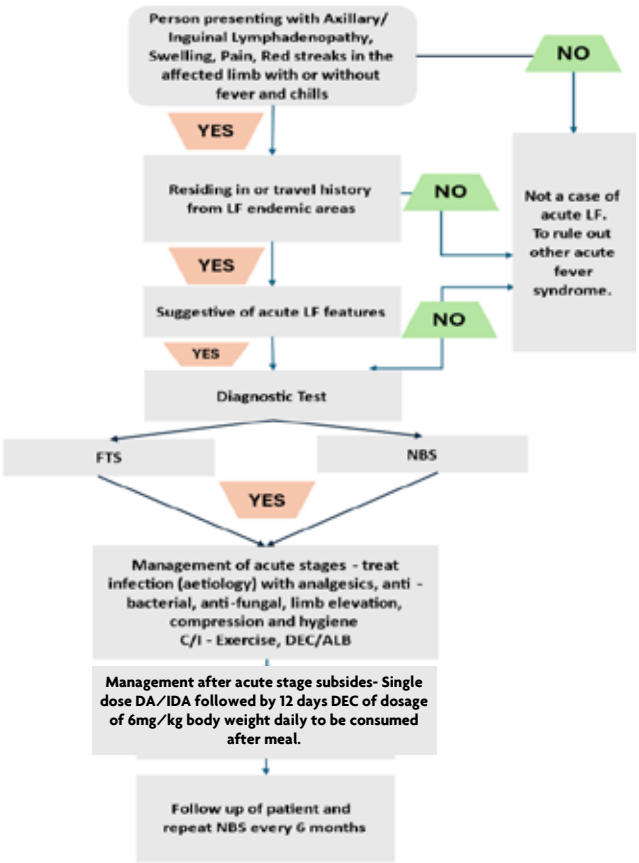


Figure 6.1: Algorithm for Management and Follow up of Acute LF Cases

Chapter-7

MORBIDITY MANAGEMENT & DISABILITY PREVENTION (MMDP)

- Lymphoedema and Hydrocele are chronic manifestations of LF, occurring due to progressive and repeated acute attacks.
- The goal of MMDP programme is to provide access to essential care package for every person with lymphoedema or hydrocele in LF endemic areas.
- Essential care package includes management of lymphedema, treatment of acute ADL, surgery for hydrocele and treatment for any remaining LF infection.
- The backlog of hydrocele cases pending for surgery should be cleared as early as possible. Lymphoedema management through home-based care also needs to be strengthened.

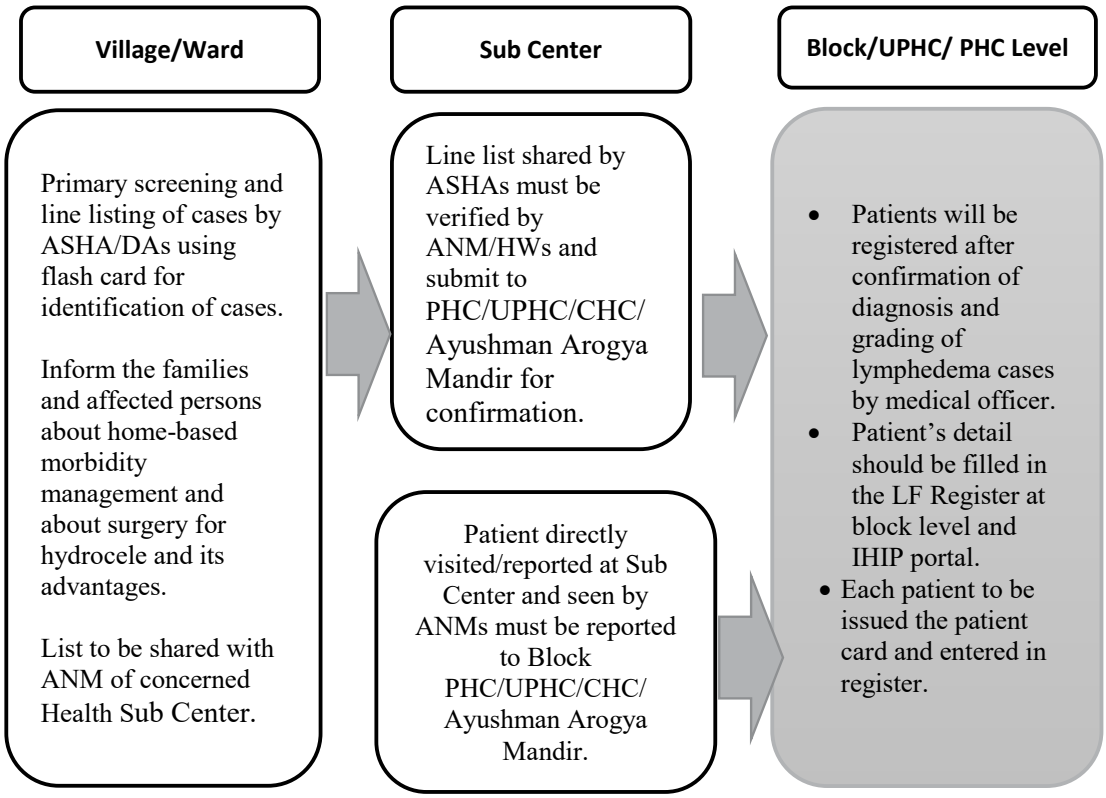
7.1 Introduction

Lymphatic filariasis (LF) endemicity is strongly tied to poverty and leads to debilitating, chronic forms of morbidity, most notably hydrocele and lymphoedema. In addition, the social impacts of the disease in terms of physical disfigurement, loss of self-esteem, lowered employment opportunity, interference in sexual activity and family discord. LF is a disease of low mortality and high morbidity, LF has acute and chronic clinical manifestations. The acute manifestations are acute adenolymphangitis (ADL), acute filarial lymphangitis and acute epididymo-orchitis. The chronic manifestations are lymphoedema and hydrocele. Other manifestations are hematuria, proteinuria, chyluria, chylothorax and tropical pulmonary eosinophilia. Advanced stages of lymphedema lead to elephantiasis. The most debilitating problem is repeated attacks of acute adenolymphangitis (ADL) which hastens progression of lymphedema.

7.2 Line Listing and Registration of LF cases

Since lymphoedema is recognizable, information can easily be obtained. The suspected cases line list to be prepared by ASHAs/DAs during enumeration exercise for mass drug administration every year. This exercise will include line listing of cases through review of existing information, special surveys, and involvement of key informants of the area. The community heads, key informers and opinion leaders may also be a source of information which ASHAs can utilize. It is to be enquired whether any other person in the family or in the neighborhood also suffers from hydrocele. The suspected cases should be confirmed by the trained Medical Officer at PHC/CHC/AAM.

Detection and Management of lymphoedema must be a continuous process which needs to be carried out throughout the year by the general health care paramedical staff, closely monitored by the Medical Officers. The details are to be compiled at village/sub center/PHC/UPHC/District/State levels including similar compilation in urban areas. This will be useful to identify high-risk areas and more accurate estimates of the disease burden could be made. The following flow chart depict the process for **LF cases detection and registration:**



7.2.1 Patient Card

The patient card should be handed over to the patient at the time of examination by a medical officer at their home or PHCs after registration. With this patient card he/she can contact any other health facilities i.e. DH/ SDH/CHC/PHC/Subcenter for follow up and morbidity management including hydrocelectomy. On the back of the card, some key messages on morbidity management and prevention of filariasis i.e. steps of morbidity management in local language to be printed. The format is mentioned in **Annexure 6**

A duplicate patient's card should be maintained at the health facility and reconciliation must be conducted once a year or after enumeration exercise of MDA. If there is any death or lost to follow up of registered cases or hydrocele surgery performed, LF register must be updated accordingly, and patient's card of those patients must be removed from the pool of active patient's register.

All the verified and confirmed cases of Lymphoedema and hydrocele by the Medical Officer need to be uploaded on the IHIP portal as per the desired format. A unique ID number for each patient will be auto generated in the IHIP portal for tracking the individual cases and avoiding duplicate entries.

There shall be two ELF Registers, one each for Lymphoedema and Hydrocele. Alternatively, if case load is less, one register may be divided into two sections – one for Lymphoedema and one section for Hydrocele. The LF Register details for Lymphedema and Hydrocele are provided under **Annexure 6 (A &B)** and the same data needs to be uploaded in LF-IHIP portal.

All information regarding patients of Lymphatic Filariasis must be stored at block PHCs for at least 5 years or till the process of dossier preparation and validation of elimination is completed (whichever is later). Each district/IU must report MMDP activities monthly on 5th working day of every month to the state and state must submit monthly report to Directorate of NCVBDC on 7th working day of every month on the prescribed formats given **in annexures 10.10 and 10.11.**

7.3 Staging and Grading of Lymphoedema cases

Staging of Lymphoedema cases must be conducted at the time of verification of LF cases and must be recorded accordingly on the patient card and LF register.

The following table 7.3.1 provides details of Staging of Lymphoedema

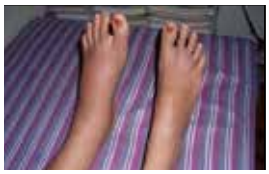
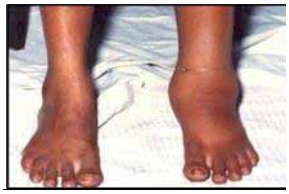
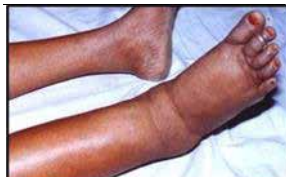
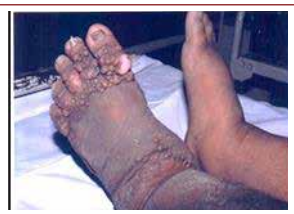
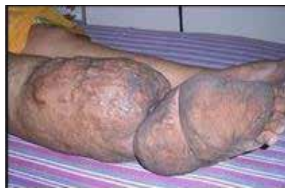
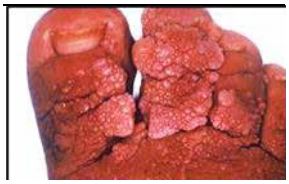
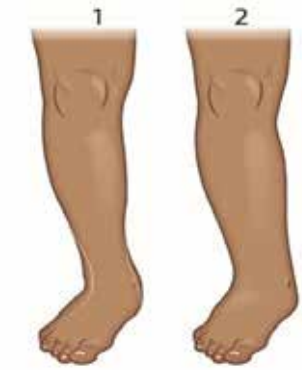
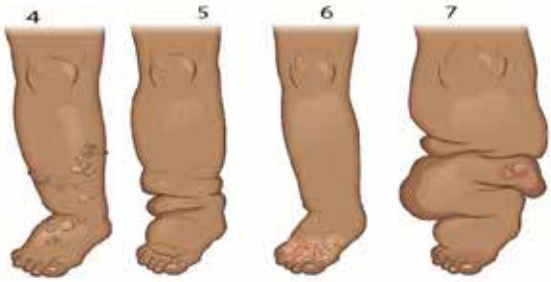
Stage	Description of condition	Illustration
Stage 1	Swelling/lymphoedema totally reversible overnight, Skin soft & smooth, Pitting oedema, No entry lesion, No acute attack	
Stage 2	Lymphoedema with normal skin, Swelling is not reversible overnight	
Stage 3	Swelling/lymphoedema is not reversible, Shallow skin folds present (the base of the fold should be visible when the patient moves the limb) Skin thickened, Entry lesion may be seen, Acute attack may occur	
Stage 4	Swelling/lymphoedema not reversible, Knobs (bumps and lump present), Skin thickened, Shallow folds may be seen, Entry lesion may be seen, Acute attack commonly occur	
Stage 5	Swelling not reversible, Deep skin fold present (the base is not visible when the patient moves the limb but may be visible when separated by finger), Skin thickened, Shallow folds/knobs may be seen, Entry lesions common, Acute attacks common	
Stage 6	Swelling not reversible, Warty (Mossy) appearance, Shallow/ deep folds and knobs may be seen, Entry lesions common, Acute attacks common large swelling, incapacitated (in absence of ADL)	
Stage 7	Irreversible requiring help for routine activities/may be bed ridden	

Table 7.3.2 Summary of Grades based on stages.

Grade	Description	Corresponding 7 stages	Illustration
Mild	Lymphedema without folds, may or may not be reversible	Stage 1&2	 Reversible Not reversible
Moderate	Lymphedema with shallow folds	Stage 3	 Shallow folds fold
Severe	Lymphoedema with skin changes (mossy lesions, knobs, and/or deep folds)	Stage 4-7	 Knobs Deep folds Mossy lesions Incapacitated

Periodical assessments need to be conducted and these findings should be recorded systematically in the patient card and the register. The details are also to be entered in the IHIP portal for each patient.

7.4 Morbidity Management and Disability Prevention

The goals of MMDP are to alleviate suffering in people with acute attacks, lymphoedema and hydrocele and to improve their quality of life. The aim is to provide access to the recommended essential package of care to every person with these manifestations in all the areas with known patients (lymphoedema/hydrocele). The MMDP programme of WHO envisages 100% geographic coverage of services in all areas of the endemic countries with known patients.

The recommended essential package of care includes:

- Treating acute attacks: Treating episodes of ADL among people with lymphoedema or elephantiasis.

- Managing lymphoedema: Preventing debilitating, painful episodes of acute attack and progression of lymphoedema.
- Managing hydrocele: Providing access to hydrocele surgery; and
- Providing antifilarial medicines: to destroy any remaining worms and microfilariae by mass drug administration or individual treatment for LF infection.

7.4.1 Lymphoedema Management

Lymphedema is usually seen in legs, hands, and rarely breasts and genitalia. During infective mosquito bite, L3 stage larvae go to the lymphatics and develop into adult worms. These adult worms live in nests within the lymphatic and causes dilatation of lymphatics. This dilatation results in lymphatic dysfunction and accumulation of fluid, exudation of lymph and oedema. Subsequent fibrosis results in dermatosclerosis and lymphoedema. Fibrosis is sometimes progressive, causing folded skin with deep creases; nodules, warty growths, papillomatosis, hyperpigmentation, and hypertrichosis (elephantiasis). This is the most severe form of disease.

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 effective lymphedema management measures are as following:

1. Hygiene measures
2. Skin and wound care
3. Exercise
4. Elevation of limb
5. Wearing comfortable footwear

1. Hygiene Measures

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

Supplies needed.

- Clean water at room temperature
- Soap (least expensive soap without perfume)
- Bucket/Basin and mug
- Antibacterial cream (as per the requirement)
- Footwear within easy reach
- Towel

Additional materials sometimes needed:

Lymphoedema patients may have open sores, entry lesions, infected areas, or even fungal infection. Any form of bacterial or fungal infection may require anti-fungal or antibiotic creams for management. Patients requiring antibiotics or anti-fungal creams need to be referred to the nearest health facility for examination and evaluation. The health facility will provide the required antibiotics or anti-fungal as per the examination and assessment.

Check skin for

- Entry lesions, including very small lesions between the toes and between the folds if any that can hardly be seen.
- 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.
- Toenails 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.
- 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.

Wash the leg.

- Wash your hands before beginning.
- Wet the leg with clean water at room temperature. Do not use hot water to wash your leg.
- Lather the soap in the hand or a clean cloth and start washing from the highest point of swelling (usually around knee).
- Wash down the leg towards the foot.
- 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 or any abrasive material should not be used as they can damage the skin.
- Rinse with clean water.
- Repeat this careful washing until the rinse water is clean.
- Wash the other leg in the same way, even if it looks normal.
- If both legs have lymphedema, wash the leg with higher grade of higher lymphoedema first.
- Dry the skin.
- Pat the area lightly with a clean towel.
- Do not rub hard because this can cause damage to the skin. 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.

2. Skin and Wound Care

Protect skin from injury and use washing as an opportunity to identify and address entry lesions. Intact skin provides an effective barrier against infection. Care should be taken to protect the skin from injury and treat wounds. entry lesions should be managed using antibiotics or antifungal creams as prescribed by the Medical Officer that help to prevent fungal infections in deep skin folds and in interdigital spaces. Nails should be kept clean. Do not pop, open, cut blisters or damage the skin. Seek care at a health care facility, if an entry lesion has drainage, a foul odor, redness or swelling, or if a fever develops.

3. Exercise

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 attack. The affected area should be exercised regularly with low-intensity movement of the joints to promote lymphatic flow. Besides walking short distances, simple exercises can be done.

Standing:

- Up on the toes exercise
- Stand with both feet slightly apart, holding on to a wall, a person or other support.
- Raise on to the toes of both feet at the same time and then sink back down to flat feet.
- Repeat 5-15 times or as often as comfortably.
- If the patient is unable to raise both feet at the same time, the exercise can be done one foot at a time.

Sitting or lying down

Toe point exercise

- While sitting or lying down, point your toes towards the floor.
- Then bend (extend) the toes upwards.
- Repeat 5-15 times or as often as comfortably.
- Repeat with the other leg.

Sitting or lying down

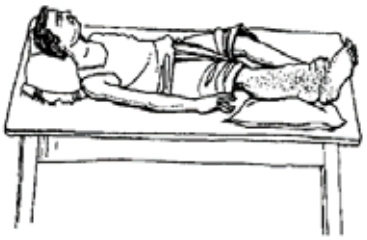
Circle exercise.

- While sitting or lying down, move the foot in a circle to the right and to the left.
- Repeat with the other leg.
- If sitting on the floor, protect the heel with a flat pillow.

The exercise can be done at any time but the best time to do the exercise is in the morning before getting up from bed as this will be the time when the edema will be minimal.

4. Elevation

Elevation of affected limbs is important for patients with lymphoedema of the leg. It helps prevent fluid from accumulating and enhance drainage of fluid. The affected area should be raised at night and when possible, during the day to promote lymphatic flow.

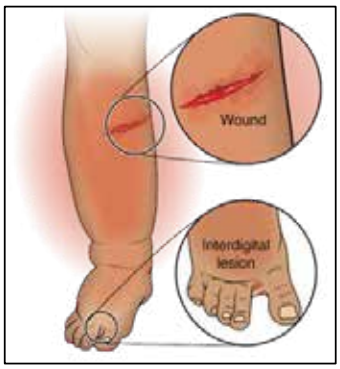


The knee: The knee should be slightly bent, and a pillow should be placed under the knee for support. While sitting: Raise the foot as high as is comfortable, preferably as high as the hip. If sitting on the floor, place a small pillow under the knees. Legs could be elevated during regular activities like work, leisure, or breast feeding. While lying down, the foot can be raised by placing a pillow under the mattress. Do not elevate legs on any surface with sharp edges. Patients with heart problems should not elevate their legs unless advised by a doctor.

5. Wearing a protective footwear

Comfortable footwear adapted to the size and shape of the foot should be worn to protect the feet against injury. Proper footwear protects feet from injury. Too tight footwear can cause injury and favors acute attack. **Patients should avoid footwear that makes their feet hot and sweaty / are too tight.**

7.4.2 Prevention and Cure of Entry Lesions



Entry lesions are any break in the skin that allows bacteria to enter the body. Entry lesions are common in patients with lymphoedema and are most frequently found between the toes and deep skin folds and around the toenails. Entry lesions, such as wounds, can also be found on the surface of the skin. Both fungi and bacteria can cause entry lesions.

The entry lesions are those lesions favoring entry of bacteria into the skin and that include injury, fungal infections, wounds, paronychia or infection of nails, fissures of feet and even insect bite. Fungal infections between the toes or the folds, between nodules frequently cause itching and people tend to scratch and damage the skin and create entry lesion for bacteria to enter the body resulting in an acute attack. Fungal infection per se will not directly result in an acute attack. Fungi and bacteria can cause bad odor.

Treatment for entry lesions: Antifungal and antibacterial creams can be used for local application along with good hygiene and treatment of entry lesions are important measures for managing lymphoedema. The patients should be encouraged to practice skin care and hygiene and to use proper footwear. The reduction in the frequency of acute attacks is an indication that the patient's condition is improving.

Fungal infections: Fungal infections are usually white or pink in color and do not leak fluid. Bacterial infections may leak fluid that is thin and clear or thick and colored.

Antifungal and antibacterial creams: After washing and drying, if there are interdigital fungal infection, antifungal ointments can be applied. If there are any injuries or cuts and wounds antibacterial cream can be applied if needed.

7.4.3 Management of Acute Attacks

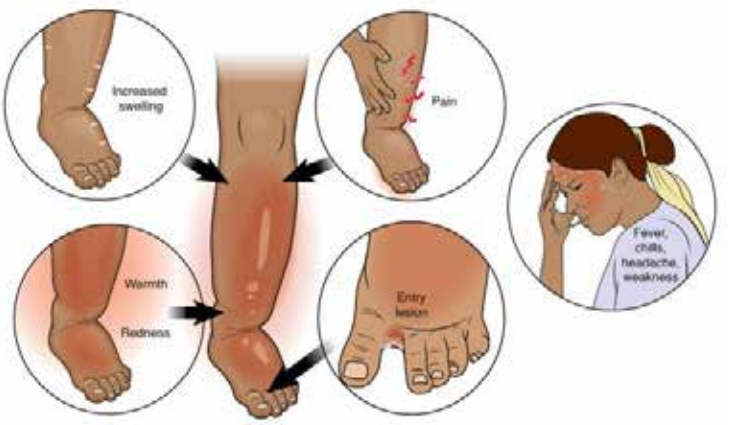
Acute attack:

The presence of adult filarial worms in the human body can result in inflammation of the lymphatic system, which can cause lymphangitis and lymphadenitis. This can make the lower limbs especially vulnerable to recurrent bacterial infections. These secondary infections can trigger Acute Dermato-Lymphangio-Adenitis (ADLA), which is also known as "acute attacks" or ADL. These attacks are the most common symptom of lymphatic filariasis (LF) and can significantly contribute to the progression of lymphedema.

Due to a damaged lymphatic system, patients with lymphoedema have frequent attacks of infections causing high fever and severe pain. Patients may be bed-ridden for several days, and normal routine activities become difficult. An acute attack of infection is painful. The patient may complain of fever, nausea, headache, pain and tenderness in the affected limb and soreness of the lymph glands. Most patients can easily care for their acute attacks at home. The reduction in the frequency of acute attacks is an indication that the patient's condition is improving. An acute attack is painful. The patient should rest and elevate the leg comfortably as much as possible at home.

Management of acute attack is as follows:

- Antibiotics in the mainstay of treatment of acute attack since this is caused by bacterial infection. Usually, oral antibiotics will suffice. If patient has co-morbidities and severe infection parenteral antibiotics may be required and patient should be hospitalized.
- Analgesics and anti-inflammatory drugs should be given as per the intensity of symptoms.
- A cloth soaked in water and placed around the leg can relieve pain. The leg can be soaked in bucket of cold water.



The signs and symptoms are presented below.

- The leg should be washed with soap and clean water, gently and carefully.
- After drying, antiseptics can be applied to the skin around the entry lesions or soreness, if any.
- The patient should drink plenty of water.

Don't during Acute Attack phase.

- No exercise during an acute attack as it is painful.
- DO NOT treat with anti-filarial medications during the attack.
- DO NOT pop, open or cut blisters or damage the skin.
- DO NOT bandage.

Referral Criteria: Patients, with any of the signs listed below, should be seen by a doctor or to be referred to a primary health care unit when:

- There is concern for non- filarial lymphedema.
- The acute attack is accompanied by confusion, vomiting or high fever.
- The patient has an acute attack and is pregnant.
- Fever, shaking, chills, or pain in the leg that does not respond to treatment within 24 hours.
- The patient has an acute attack that does not improve after 48 hours of administering antibiotics.
- The patient has an entry lesion with drainage and foul odor as well as redness or swelling, or if fever develops.
- Splitting of the skin because of rapid increase in the size of the leg
- The patient has advanced lymphedema with repeated acute attacks despite the institution of hygiene measures.
- The patient needs psychological services.

7.4. 5 Surgical Management of Hydrocele due to LF: Hydrocelectomy

The lack of attention given to hydrocele surgery is compounded by the inadequate access of existing surgical facilities by hydrocele patients. This is due to reasons such as ignorance, fear of surgery and its consequences, lack of access to facilities, and the high cost of surgery and hospitalization. The cumulative effect of these factors and the past complacency in implementing quality morbidity management services has resulted in a huge backlog of hydrocele cases pending for surgery in the country. It is recommended to plan and organize periodic hydrocelectomy surgeries to address the backlog.

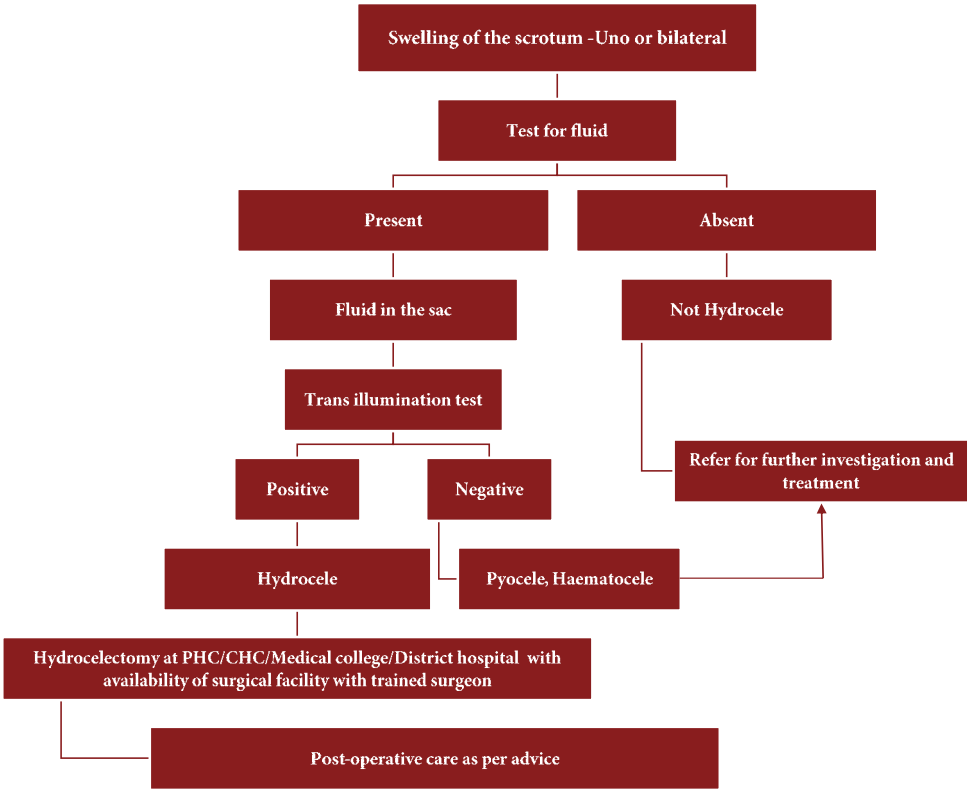


Figure 7.8: Flow chart to guide hydrocele management[1]

Just like any public health programme, success of hydrocele surgeries depends on a lot of factors beyond the presence of only surgeons and logistics. It is highly recommended that the health facility, which is made responsible for planning a hydrocele surgery should be guided for ensuring following:

- Prior advocacy with hydrocele patients: This not only helps in reducing their fears but also builds their trust within the health system.
- Information, Education, and Communication (IEC): using electronic-media, radio, miking, announcements etc in the concerned villages with hydrocele patients.
- Screening of scrotal swelling cases for simple uncomplicated hydrocele cases, will help in referring any high-risk hydrocele patients to district/ sub district facilities wherever such surgeries are performed.
- Fitness testing for surgery: to be performed by a trained medical officer.
- Informed consent and pre-operative preparations: to be completed before beginning of surgery. Prior discussion with concerned surgeon and anesthetist will help in ensuring that all necessary logistics are available before surgery begins, including anesthesia.
- Immediate post-operative monitoring to avoid complications.
- Post-surgical observations: to be recorded. This not only helps in quality follow-up of patients but also helps in documenting lessons learnt.
- Discharge: health staff should be aware of the minimum procedures to be completed as part of the discharge process.
- Review and follow up of persons underwent hydrocele surgery.

Since all precautions are required before the surgery and therefore the surgeries should be done after adequate microplanning, where at least surgical facilities and anesthetist are available.

[1]WHO SEA Region guideline on "Morbidity management and disability prevention in Lymphatic Filariasis" 2013

Patient Information

A patient information pamphlet based on the following suggestions will help minimize the possibility of patient dissatisfaction after surgery. Informed consent should be obtained from the patient after informing him of the benefits, expected outcome, and side-effects of the procedure. The patient should know that:

- He has a condition which can be cured by a simple surgical procedure with minimal and minor side effects.
- There is a likelihood of some swelling after the surgery. The swelling may last for a few weeks before the scrotum becomes normal in size.
- He must take the medication prescribed by the surgeon as per the schedule advised and for the duration recommended.

Trainings

Training should include training in lymphedema management and treatment of ADL. The state should identify trainers for training surgeons/medical doctors. This is an important step to create a pool of trained medical officers who can actively participate in carrying out hydrocelectomy periodically as per the outreach plan. The profile of the trainers usually is qualified surgeons with experience in hydrocele surgery working in endemic areas (they could also be surgeons attached to teaching or training institutions with continued experience of hydrocele surgery). The identified medical officers need to be trained by the master trainer on case demonstration and actual surgery need not be performed during the training, Surgery protocol etc. It is recommended that every LF endemic district should identify physicians/surgeons who need to be trained in carrying out hydrocele surgeries. These identified PHC/UPHC/CHC medical officers should be trained in performing diagnosis, testing for fitness for surgery, all aspects of protocol for surgery, post- operative care, and follow-up.

Programme Norms

To strengthen hydrocele management, Government of India has provisioned INR 750.00 for each hydrocele operation and INR 500.00 for supplying "morbidity management kit" to each lymphoedema case under state PIPs of NHM. The incentive for hydrocelectomy is flexible and can be used to support transportation of patients, wage loss, mobilization incentive to ASHA or FLW, wage loss cost for accompanying attendant or medicines kits for the patient's post-surgery.

States are encouraged to utilize the provision of hydrocelectomy surgery under PMJAY scheme of Ayushman Bharat for eligible beneficiaries, wherein there is a provision of Rs.5000/. for unilateral hydrocelectomy. (https://pmjay.gov.in/sites/default/files/2020-01/HBP_2.0-For_Website_V2.pdf)

The LF endemic states to ensure training to Lymphoedema patients about foot care in terms of washing, drying, simple foot exercise and taking care of entry lesion etc. that will go a long way to help Lymphoedema patients. A budget of Rs 500 is provided for MMDP kits. All Lymphoedema cases should be given "morbidity management kit" free of cost containing a plastic bucket, mug, soap, towel. The states have also been advised to develop a plan for morbidity management activity, as mentioned above, and execute it thoroughly. The support from medical colleges is crucial in MMDP services, and training.

Disability and entitlements: Rights of Persons with Disability Act

The Gazette of GOI, by Ministry of Social Justice and Empowerment [Department of Empowerment of Persons with Disabilities (Divyangjan)] New Delhi, dated 4th January 2018.

As per the Persons with Disability Act (RPwD Act), the locomotor/physical disability due to primary or secondary lymphoedema qualifies for disability certificate. Under the rule, the scoring of lymphoedema has been included with its 4 Grades.

The States to consider facilitating with concerned authorities in issuing disability certificates to all patients with Lymphoedema Grade 3 and Grade 4 presenting with locomotor/physical disability and support them to access the benefits.

Some of the state Governments are already providing financial assistance for cases of lymphatic filariasis. For instance, Andhra Pradesh is providing financial assistance of Rs. 5000/- for bilateral elephantiasis- Grade-IV patients under YSR Pension Kanuka Scheme, Telangana is providing monthly pension of Rs. 2016/- to Grade-II onwards filariasis affected persons under the Aasara Pension Scheme and Tamil Nadu is providing Rs. 1000/- for Grade-III & IV lymphatic filariasis cases.

The responsibility matrix of health staff for MMDP is shown below:

Responsible person	Responsibility	Action
ASHA (early Referral, case detection of LF cases)	• High suspicion of early case of lymphedema during regular surveys • Identify fever with lymphangitis, swollen and tender lymph node, LF endemic area. • Enquiry about scrotal swelling patients in endemic area from family members. • Home based management and follow up of the cases	• Refer to nearest HWC/PHC for slide collection for diagnosis and early treatment. • Management of acute attacks of lymphangitis
ASHA (Chronic LF cases)	• Prepare and update the list of suspected cases of lymphedema and hydrocele. • Train all the lymphedema patients on lymphedema management measures at home or HWC/PHC • Regular follow up to assess the practice of lymphedema management and use of MMDP kits during the routine field visits. • Motivate and counsel the hydrocele patient to undergo surgical intervention and explain the benefits to him and family members. • Recording the data on progress of MMDP activities in standard format.	• Refer to nearest HWC/SC/PHC for validation and confirmation of early lymphedema case. • Follow up cases. • Counselling of patients • Record keeping and documentation

Responsible person	Responsibility	Action
Ayushman Arogya Mandirs	• Collect night blood smear slides of the suspected cases for early diagnosis of LF. • Treatment of positive cases to prevent chronic disability. • MMDP care to chronic lymphedema cases and facilitate distribution of the MMDP kits. • Examination and counselling of hydrocele cases for surgery • Follow up of the Mf positive cases and chronic LF cases. • Refer to PHC/CHC as per the requirement for further management.	• Selective Microfilaria carrier treatment with treated with Directly Observed Single dose of DA or IDA as per the MDA regimen followed by standard treatment with DEC of dosage 6mg/Kg body weight daily for 12 days to be consumed after the meal. • Organize camps at AAM-HSC/village level by mobilizing the Lymphoedema cases and demonstrate home based care with self-care practices and use of MMDP kits. • Treatment of Mild & uncomplicated Acute Phase Illness like Acute Lymphangitis (acute attacks) at H&WC • Conduct Weekly fever clinics and rapid tests of all fever cases. • Community mobilization for MDA and Night Blood Surveys
PHC level Medical Officer	• Diagnosis of early LF cases • Follow up of the asymptomatic and chronic LF cases. • Treatment of positive case to prevent chronic disability. • Treatment and management of acute attacks • Verification of the suspected chronic cases and grading of LF disability. • Documentation of patient records. • MMDP care to chronic lymphedema cases and facilitate distribution of the MMDP kits. • Examination and counselling of hydrocele cases for surgery and refer. • Fixed days for conducting hydrocele surgeries in camp mode. • Refer to CHC/ DH as pe the requirement for further management. • Undertake training for FLW on MMDP care.	• Review the cases of LF for grading disability. • Identify, treat acute attacks and its complications and report activities. • Identify, manage lymphoedema and its complications and report activities. • Ensure availability of supplies for MMDP Care to patients. • Perform safe hydrocelectomy or • Identify patients who require surgery, refer to hospital and report activities
District Hospitals/Medical Colleges – Medical Officers/Head/Professors of Medicine, Surgery, and dermatology	• Treatment of recurrent ADLs/Acute attacks and complicated cases • Surgery for Hydrocele cases referred by PHC/UHCs • Trainings on MMDP care to medical officers	

Chapter-8

THE SOCIAL AND BEHAVIOR CHANGE (SBC) AND ADVOCACY FOR ELF

- Leveraging and layering existing channels and platforms for engagement of allied departments for intersectoral convergence.
- Customized Communication for the communities to enhance consumption of anti-filarial drugs.
- Advocacy activities to promote commitment of key leaders at the national, state and district levels and continuous focus on the LF elimination program.

8.1: Introduction

The Social and Behavior Change Approach to accelerate the elimination of LF: Social and Behavior Change (SBC) is an essential component in Elimination of Lymphatic Filariasis programme. SBC is important for building enabling environment prior to the MDA rounds and prepare the communities to consume anti filarial drugs. As the endemic areas are diverse and have existing resources in the form of platforms and channels, it is essential to develop the social mobilization plan aligned to the local culture and context.

Figure 8.1

Under the ELF these SBC strategies are undertaken as a holistic approach to witness sustained behavior change:

1. **Community Centered Behavior Change Communication** to influence knowledge, attitudes, and practices at the individual and family level.
2. **Social Mobilization** to foster wider participation, leverage the existing platforms and channels for collective action, and enhance ownership and change community norms.
3. **Advocacy** to create an enabling environment to secure leadership commitment and raises resources.

8.2 SBC activities

MDA comprises of three phases, pre-MDA, MDA, and post MDA. Of these, pre- MDA is most opportune time to inform and influence every individual/family and motivate them for consumption of anti-filarial drugs in front of the Drug Administrator.

8.2.1 SBC activities during Pre MDA phase:

Enumeration in the Pre MDA phase, the first opportunity to reach the households with the key awareness messages about LF and MDA. The Front-Line Workers (FLWs)/Drug Administrator (DA) should communicate to the household about filaria and preventive drugs along with the date of MDA. FLW/DA must carry a communication tool (flashcard/ brochure/ FAQ) to communicate effectively and firmly answer the questions raised by the families in her catchment areas. For the enumeration, the DA should have family register. During the enumeration, the DAs should do IPC

sessions with the family members with focus on the members who had not consumed anti filarial drugs or had not adhered to DOT.

Timely printing of Information, Education, and Communication (IEC):

A tool kit is developed by NCVBDC with multiple IEC materials, prototype is shared with the states in advance. States should feel free to develop additional IECs to address the prevalent myths and misconceptions prevalent in the local communities to motivate the community to take the right actions.

A specific IEC plan should be developed at block and district level considering the number of facilities, front line workers/DAs, along with the suggested time and place for displaying the same.

IEC material should be made available at the block level at least one month before the MDA. Every DA should carry enough print materials. During DAs' training a session should be conducted on the effective use of these materials.

Every block/IU should be given enough IEC materials which should be used to provide to the key influencers and key platforms like schools, women collectives, panchayat leaders, etc. Banners can be displayed in the key places in the targeted rural and urban areas to inform people about dates of MDA and provide related information.

The digital IEC materials should be shared with all the existing media and social media channels. IEC dissemination plan should be developed at block, district and state level in advance to leverage all the existing channels engaging the Information Officers at the state and district levels. The suggested IEC materials with purpose are mentioned in below table 8.1.

Table 8.1 Suggestive usage of the existing IEC materials

Name of the material	Where it can be used
Poster	It can be used in district/block headquarter, prominent public places like market, schools etc. in village
Flip book on MMDP	To educate the patients and their family members and during demonstrations by frontline workers
Brochure on MDA	Drug administrators can use at the booth and house to house drug administration to enhance Interpersonal Communication
Handbill	Can be used to support PRI members, SHG members, schoolteachers, and other influencers in the community
Banner on MDA	It can be used in district/block headquarters, prominent public places like markets, schools etc. in villages. It can also be used for miking as part of urban mobilization.
Television Commercial on MDA	It can be used in cinema halls, local cable, social media and WhatsApp groups or other platforms.
Audio announcement content	It can be used by the religious leaders, PRI leaders and for miking especially in the urban areas
Sankalp	It can used in the schools, women collectives/NSS cadets, various departments at the district and block level
Awareness Songs	It can be used for miking, wherever the public announcement system is available.

Name of the material	Where it can be used
Videos by eminent Leaders	It can be used in cinema halls, local cable, social media, and WhatsApp groups of SM and other platforms.
Video on ASHA training	It can be used during Drug Administrators trainings where MDA is conducted with double/triple drug Video on MMDP focusing on MMDP care
Animated videos (Do you Know Series)	It can be used for DA trainings, meetings with the platform leaders, DCC, SBC meetings (if time permits), WhatsApp messages for the community cadres, officers, and students.
Animated videos, posters and GIFs on mosquitoes	It can be used for DA trainings, meetings with the platform leaders, WhatsApp messages for the community cadres, officers and students.

For further reference, you can download SBC, IEC and training material at:
https://ncvbdc.mohfw.gov.in/index1.php?lang=1&level=1&sublinkid=5828&lid=3802

Media sensitization workshops: Organize media workshops at the state and district level, collaborating with the Health Department and experts. The aim is to ready the media to go beyond daily reporting, sensitizing them to the issues, clearing misconceptions, and addressing doubts. The workshops should be organized for three to four hours, ensuring they are both interesting and stimulating. Allow communities, including patients and beneficiaries, to share their experiences. Develop media materials, including program fact sheets, FAQs, backgrounders, and event or issue releases.

Media briefings: Organize small media briefings with 4 to 6 journalists for specific spaces and slots (prime talk shows, panel discussions, interviews, op-ed) to shape content that is both appropriate for the spaces they are writing for and can present the information with both accuracy and understanding.

Be ready to shape multimedia content: Learn to shape a variety of content to engage different audiences, such as news reports, video documentaries, infographics, scripts for roleplays and radio and community radio programs and podcasts.

Prepare for Crisis Communications: Have a crisis communication plan in place for any negative outcomes or public backlash related to LF elimination efforts. Promptly and transparently address issues to maintain public trust.

Sustain Engagement and Momentum: Keep the issue alive in the media by providing regular updates, share achievements, and reminding the public and program stakeholders of the ongoing need for support until LF is eliminated.

Develop a "communication campaign plan" there should be a communication campaign plan leveraging all the paid and unpaid channels. It is recommended to consider the local dance and drama division, information officer and execute the plan.

Conduct inter-sectoral convergence meeting: To achieve desired level of DOC, it is essential that each household have advance information about the MDA dates. Programme should coordinate and engage wide range of platforms, partners, and allies at various levels to raise awareness about the disease, prevention, and available services.

To augment the effect of social mobilization and sustain through system, the programme should trigger innovative engagement and partnerships with ministries government flagship programmes, development partners, social groups, corporate and private sectors, academic institutions, and promote inter-sectoral convergence. Every block and panchayat should map all the platforms and reach out to them with key messages on the disease, vector and significance of preventive drugs through the mobilization team placed at the block and panchayat level.

Below figure 8.1 elaborates the ministries which have last mile connectivity, and its concerned platforms/ programmes which could be leveraged for an effective MDA mobilization.

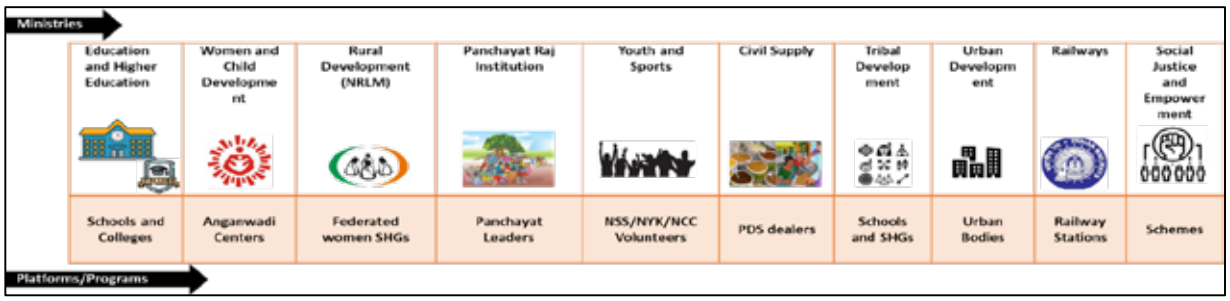


Figure 8.1 : Engagement of allied departments

Engagement of the District Magistrates/Collectors: The District Magistrate (DM)/District Collector (DC) plays a vital role in accelerating the Mass Drug Administration. The DM/DC should be engaged in chairing the District Coordination Committee Meeting to ensure involvement of all concerned departments and organizations in MDA. They also should conduct frequent review meetings prior for preparation review and during the MDA.

The following are the suggested Activities for effective engagement of the above referred platforms:

Platform: Schools	
Activities: • Advisory for schools to conduct drug administration after Mid-Day Meals in all the schools. • Motivated to attend the State/district Task Force Meeting. • Instruct all the Block Education officer (BEOs) to conduct the Pre MDA mobilization activities in all the schools of the endemic blocks and ask BEOs to report back to the district. • Special instructions are released for the schools in the urban areas for MDA mobilization. • Facilitate orientation of all the BEOs on integrated MDA and NDD. • Attend District Coordination Committee Meeting. • Share the LF related communication materials with all the principals/ head teachers. • LF discussions in morning assembly. • Essay writing/drawing competition in schools prior to MDA on LF and vector control.	 

Platform: Anganwadi Centres

Activities:

- Issue directives to the DPOs /CDPOs to support the LF elimination programme and integrated MDA and NDD
- Orient the DPOs on LF elimination Programme and integrated MDA and NDD.
- Issue advisory to conduct mass drug consumption at AWC for children over 2 years.
- Attend the State Task Force Meeting and Block Coordination Committee meetings.
- Support the MMDP activities.
- Sector supervisor to orient the AWWs on integrated MDA and NDD activities along with reporting.
- Share the LF related communication materials with all the AWWs.

Platform: Federated Women SHGs

Activities:

- Issue advisory to the endemic states to support the LF elimination programme and the connect between nutrition- MDA-NDD.
- Issue advisory to the DPMs to support the LF elimination programme, District Programme Manager to orient all the BPMs on their roles in LF elimination programme.
- Attend the State/District/Block Task Force Meeting.
- Issue a date in coordination with district VBD team to conduct mass drug consumption in the women collectives (SHGs/Village Organizations/ Cluster Level Federations).
- BPM to orient all the Community Mobilizers (CM) for MDA mobilization activities.
- Ensure mass drug consumption and women to ensure drug consumption among her eligible family members and in her neighborhood.

Platform: Panchayat Leaders

Activities:

- Issue advisory for the states to support the LF elimination programme.
- Orient the District Panchayati Raj Officers and Block Developmental Officers (BDOs) on the LF elimination programme and effective engagement of the BDOs in MDA mobilization, sanitation activities and support the MMDP activities. Attending the State /District Task Force Meeting.
- BDO to orient all the panchayat mukhiyas and secretaries on their role in MDA mobilization, inauguration of MDA by consuming anti LF drugs in public (report back to BDO).
- Share the LF related communication materials with all the Panchayat Mukhiyas.
- Review the drug administration status in the panchayat by calling a meeting with the DAs.
- Panchayat Mukhiya to ensure wall writing.
- Panchayat to organize a filaria gosthi in their respective areas to sensitize community on MDA and benefits of anti-filarial drugs.
- Panchayat Mukhiya to inaugurate campaign by consuming drugs in presence of community stakeholders.

Platform: NSS/NYK/NCC Volunteers

Activities:

- To issue directives to all the concerned NSS coordinators of colleges/ Universities
- Conduct awareness activities in the college/university premises.
- Organize booth at the college/university premises for mass drug consumption.

Platform: PDS Dealers

Activities:

- Issue directives to the District Supply Officer to support the MDA mobilization, blocks to engage the PDS dealers for MDA mobilization by displaying the IEC and informing the communities about MDA and LF prevention.
- Share the LF related communication materials with all the PDS dealers.
- Support the DAs to convince the refusal families.
- PDS dealers put one MDA banner/poster at her/his shop for awareness generation.
- PDS dealer to tell MDA benefits to the community on the day of ration distribution.

Platform: Tribal department /Schools and SHGs

Activities:

- Engage schools/residential schools and SHGs for informing the households about the MDA dates and LF.
- Organize booths at schools and hostels.
- Engage local structures of tribals under tribal welfare department.

Platform/Program: Urban Bodies

Activities:

- Municipal Commissioner issues advisory-for the sanitation team to support the MDA mobilization, carry out vector control activities in wards with sanitation drives.
- The Nagar Nigam leaders/ward members should be made accountable for improved coverage and compliance in their geographical areas. They should coordinate with the resident welfare associations as well as the local leaders in the slum areas.
- National Urban Livelihood Mission issues instruction for mass drug consumption in all the SHGs.
- NHM has promoted Arogya samitis, NULM promotes women collectives, these platforms should be leveraged to inform the communities about the key messages on MDA.
- DM/DC issues instruction to all the Resident Welfare Associations for arranging MDA booth and ensure all the residents consume anti filarial drugs.
- Unit heads organize mass drug consumption in the universities and colleges and report back to the district.

Platform: Railway Stations

Activities:

- Run announcements about the disease and MDA dates and places of availability of drugs.
- Allow the DA teams to conduct MDA activity in railway colonies and booths in the railway hospitals.
- Display banners and posters about the MDA dates

Training of the DAs and Supervisors on SBC: IPC is a specific skill, it requires training. During DA/ Supervisors training, a session on effective IPC should be conducted. It is recommended to have role plays to enhance the confidence of DAs and supervisors. All the DAs and Supervisors should have a copy of FAQs and relevant communication tool. Which will enable them to respond to the questions raised by the hesitant families and covert the refusals.

A session on social mobilization- elaborating on leveraging existing channels and platforms also should be added in the training.

Session on refusal conversion: As the program promotes and focuses on DOC, the number of refusing individuals and families will increase. The programme should prepare the DAs and supervisors to manage the refusals and convince them for DOC using the communication tools promoted by the programme.

Leverage the patient support network: Peer support groups are a proven model to engage the patients and equip them for their care as well as leverage to mobilize communities for preventive action. A group of people suffering with lymphedema can form a peer group. Apart from taking care of self, the group can also be a collective force to be used beyond the ambit of self-care. This network can play a vital role during MDA campaign for more community acceptance, but also in influencing their peers (people affected by LF) for regular self-care practices, referring the persons with hydrocele for surgery. They should be provided with materials, pamphlets or booklets on home-based care and self-care kits.

Engagement of influencers (religious leaders, health service providers): Basis the communities, it is recommended to identify the influencers and sensitize them about the disease and motivate them for informing the communities about the disease and MDA. They should also be engaged for convincing the refusals during the MDA.

Engagement Popular public figures like movie stars, national & state level sports personalities help build public opinion by strengthening perception and raising the communities' trust in the programme. They should be regularly engaged to raise awareness about the LF elimination programme, generate demand for MMDP services, reduce stigma associated with the disease, dispel misconceptions, and encourage community members to consume preventive drugs. Popular movie and television actors, regional actors, sportspersons, social media influencers, other community influencers like imams should be engaged through regular meetings to raise the visibility of LF in the public narrative.

Effective advocacy is critical for creating an environment that supports programmatic success, thereby ensuring LF remains a prioritized health issue. This involves engaging various stakeholders, including political leaders, healthcare professionals, media, and the affected community, to achieve specific, predefined outcomes.

Suggestive Advocacy Activities at various levels are mentioned in the below table 8.2.

Level	Activity	Timeline	Responsibility	Target Stakeholders
National	Video Public appeal by Key Officials	Before MDA round	NCVBDC	Hon'ble Health minister, MoHFW Hon'ble MoS, Health, MoHFW Government officials Experts
National	Media Sensitization	7-10 days before MDA round	NCVBDC	Media Reporters
State	Engagement with state health ministers and departments	Quarterly	State Programme Officer	State health departments
State	Media sensitization	7-10 days before MDA round	State Programme Officer	Local Media State Health department
State/ District/ Local	Video Public appeal by Key champions	Before MDA round	State Programme Officer/ CMO/ DVBD Officers/ MOIC	Hon'ble State Health ministers MP/MLA Mayor Block Pramukh Gram Pradhan Government officials Experts Local Celebrities Community leaders
District/ Local	Media sensitization	7-10 Days before MDA round	DM/CMO/DVBD Officers	Local media

Develop social mobilization plan: a comprehensive social mobilization and advocacy plan should be developed at the district and block level, consolidating all the SBC activities. While developing the social mobilization plan, it is essential to identify the low consumption areas, high MF rate areas and refusal areas from the previous MDA round and develop customized mobilization plan for these identified areas.

8.2.2 SBC activities during MDA phase:

MDA Inauguration: to provide visibility to the program, MDA should be inaugurated at all levels- national, state, district, block and panchayats. It is recommended to involve prominent and influential personalities (eg: political leaders, local celebrities, DM/DC, BDO, Sarpanch, religious leaders, patients) to inaugurate MDA by consumption of anti-filarial drugs in public and relay through media and social media.

Mass Drug consumption for assured DOC: all the mapped schools, colleges, offices, women SHGs should be targeted in a planned manner for mass drug consumption. The programme should coordinate and collaborate with the concerned officials in advance. Programme should plan for booth, DAs and logistics in advance, the institutions should be informed in advance for the booth days. The mobilization team should be actively engaged for this activity. Relevant IEC materials should be supplied, dates should inform the RRT about mass drug consumption so that they are prepared to support.

Refusal Conversion: mobilization team should develop their daily plans based on the daily coverage report and support in convincing the refusal individuals/families. While doing the refusal conversion they should utilize the tools provided by the programme. They should be encouraged to involve the influencers of the village like panchayat leaders, SHG leaders, religious leaders.

Community champions (People with Lymphoedema and hydrocele) need to be engaged to raise awareness about the disease and act as influencers. They will encourage community members to consume preventive drugs, avail MMDP services and address misconceptions associated with the disease and ensure their meaningful participation in MDA launch ceremonies, media workshops etc. to share experiences about the disease.

Crisis-focused sensitization: For this the journalists need to be sensitized to all the aspects of the MDA including adverse reactions. Any events that may occur with vulnerable groups like children should not be made an emotive issue, instead journalists must be readied to understand reason for occurrence of the event, how it can be prevented and steps for the management and government's preparedness on the same.

Media Site visits: Organize media site visits for journalists to educate them on the issue, take them to programme sites where everything is being implemented optimally from the first to the last step in keeping with the protocols and guidelines. The process of actual implementation can be demonstrated to the journalists to educate them the complexity of public health programming and once they are educated, they can help the programme by educating the public about the intention and commitment of the public health system.

Leverage Social Media Channels: Social media is a potent tool for raising awareness about LF and MDA rounds during Mass Drug Administration (MDA) rounds, state and district health departments should disseminate key messages regarding LF and MDA initiatives across their official social media platforms. By harnessing the expansive reach and influence of social media, the programme aims to extend its outreach to urban audiences, thereby amplifying awareness and fostering community engagement.

8.3 Focused SBC Activities in Urban areas

Level	Activity	Timeline	Responsibility	Target Stakeholders
National	Launch of Mass Drug Administration with Hon'ble Health minister, MoHFW	During MDA	NCVBDC	Govt. Officials, policy makers, media
State	Mass Drug Administration (MDA) round launch with Hon'ble State Health ministers	MDA round	State Programme Officer	State Health and allied departments
State/District/ Local	Field visit by local Political leaders Media Houses and community leaders	During MDA round /Post MDA round	State Programme Officer/ CMO/ DVBD Officers/ MOIC	MP/MLA
District/Local	Mass Drug Administration (MDA) round launch with Hon'ble MP/MLA/ District Collector	MDA round	CMO/DVBD Officers/MOIC	MP/MLA

It is observed that consistently, in urban areas the coverage and compliance during MDA are comparatively low. Low awareness and risk perception about the disease and unavailability of family members during the DAs visit are key issues in the urban areas. The type of communities in the urban area is wide-ranged- high rise buildings, colonies, slums, and big private houses; they require customized communication to motivate them for the consumption of anti-filarial drugs.

Engagement of academic institutions: Students from the universities/colleges (Social Work, Rural Development, and Public Health) must be engaged for mobilization. They should be oriented to work as the rapid communication team to handhold the drug administrators.

Engagement of business associations (Vyapar Mandal): They should be mobilized to support communication materials (banners/posters/video vans). Drug administration through booths in the market can be explored with the support of the leaders of the Vyapar mandal.

Partnering with the Corporate Social Responsibilities: engage the CSR for mobilization through their existing programmes or seek support for communication materials in the form of video vans, banners, posters, miking, Aprons to DAs etc.

Miking in the urban areas: To cover the dense population in the urban areas, miking should be done at least 3- 4 days before MDA. A thorough route plan linked with the micro plan must be prepared and monitored by the urban health facilities. An appealing content with key preparatory messages like- "consume drugs after eating", "dose" etc should be announced.

Print/electronic/social media should be engaged effectively to reach out to wider communities. Social media content should be made available through the schools and college groups. **Cinema halls** should display TVCs/short videos along with the MDA dates and drug dose, at least one month before the MDA.

Public Announcement System are available in the mosque, temple, church, tent house, traffic post, garbage collection vehicles, etc, audio content should be developed emphasizing the MDA dates, dose, benefits of anti-filarial drugs, and relayed through these PA systems. **Posters/Banners** should be displayed strategically with larger public exposure. **Public transportation**- bus, autos, rickshaws, garbage collection vehicle are some of the potential display points. **Collaborations** should also be explored with existing clubs (Rotary/Lions/Inner wheel), and Indian Medical Association/ Indian Association Pediatrics. Mahila Arogya Samiti should be engaged for mobilization. **Recognition for the best performing blocks and panchayats** should also be introduced to motivate the teams.

Engagement of Municipal Commissioner, Mayor, Ward Members and engage them to undertake and participate in programme review meetings including Urban Task Force Meetings prior to MDA rounds to ensure effective implementation of programme activities in urban areas, leverage existing social networks and Resident Welfare Associations (RWAs) to disseminate timely and accurate information and dispel myths and rumors.

Engaging staff for social mobilization: During the 7th MSG meeting of NHM, to enhance monitoring of MDA and Social Mobilization in terms of deployment of additional Human Resources to the endemic States at district, block and panchayat levels is approved for achieving better compliance and support to States during MDA rounds. **The details of additional manpower and the terms of reference for MSG approved additional support for monitoring and Social Mobilization are below.**

The following support is approved to engage during the MDA campaign for duration **of three months only**. This additional support will be deployed at district, block, and panchayat levels for facilitating pre-MDA preparatory activities, monitoring of MDA activities including social mobilisation.

At district level:

- District Monitoring Coordinator: One per district @ Rs 35000 per month for three months.
- District Social Mobilisation Coordinator: At a rate of Rs 1000 per day for three months.

At block level (for ten high risk and priority blocks/IUs/Urban areas of the district only)

- Block Monitoring Coordinator: One per block @ Rs 10000 per month for 3 months.
- Block Social Mobilisation Coordinator: One per block @ Rs 12000 per month for 3 months.

At Panchayat and Village level (for ten high risk and priority blocks/IUs /Urban areas of the district only)

- Supervisor at Village level: Honorarium for supervisors involved in MDA @ Rs.600/- for days of MDA.
- Social Mobilisation Coordinator at Panchayat level: One per block @ Rs 800 per day for 45 days.

(Note: The criteria for the selection of 10 blocks/IUs in a district: High risk and high priority blocks/IUs/ Urban areas in a district should include: 1) High Mf rate, 2) poor compliance to MDA in last two rounds 3) hard to reach area 4) high level of refusals for MDA drugs)

States are requested to kindly include these positions in the PIPs and adopt the existing procedure for recruitment by the concerned districts and partners will support in recruitment and training of the staff.

Terms of Reference

1. **District Monitoring Coordinator:** The District Monitoring Coordinator will coordinate and monitor all MDA activities (before, during and after) in the district under overall leadership of District Collector and Chief Medical Officer of the district and will supervise the block level coordinators and will be responsible for the working and accountability of Block level coordinators during MDA campaign.

Roles and Responsibilities

- Support the district in preparation of Timeline for District in lieu of state Timeline and ensure procurement of logistics (Family register, Drugs, reporting formats, marker pens, IEC material)
- Facilitate district level ToTs and preparation of block level training plan and facilitate DA trainings along with block monitors.
- Review and support the district and block level preparedness and Micro plans as per the formats and update every week on progress with District Magistrate/District officials and ensure inclusion of hot spot areas and high refusal areas of previous round and planning of activities.
- Coordinate and facilitate in ensuring logistic distribution (family registers, training materials etc), timely release of funds, printing material and formats for blocks.
- Facilitate and track the District Task Force/ District Coordination Committee meeting prior to round, during round and post round under DM/DC with involvement of other non-health departments.
- Facilitate district and block level monitoring plan by engaging concerned officials and review the monitoring plan of block monitors.
- Collection of data from block monitors and provide real time feedback of Training, Micro planning and filed survey status.
- Visit field periodically and Monitoring of teams – 2/ day and Monitoring of block level monitors – 1 each / Day.
- Analyse, consolidate and provide feedback as received from the block monitors and facilitate daily evening briefing meetings during MDA under chairmanship of CS/CMO/ DHO.
- Facilitate collection of name wise line lists of Filariasis affected cases (Lymphedema & Hydrocele) from all blocks and ensure timely submission of 13 table format report of MDA for the District and blocks.
- Coordinate and support the district officials for engagement of medical colleges for post MDA coverage evaluation and link hydrocele operations with district/medical colleges.
- Day to day coordination with local partners for synergistic planning and actions.

Experience and skills required

- Postgraduate in Public health, social sciences/sociology/any PG degree with experience of coordination, conducting effective training, monitoring of VBDs, and data management at the district/state level under health or any development programmes. S/he should have the ability to coordinate with the district leaders- District Magistrate/Collector, Chief Medical Officer, District Vector Borne Disease Officer, district level officers. Work experience at district level with programmess like MDAs, pulse polio or in any national health programmes will be preferred. The identified District Coordinator will be trained by the state in consultation with the CMO/DVBDO and partners.

Report and Remuneration: The District Coordinator should share daily report in the prescribed formats– Plan vs Accomplished with the CMO/CS/DMHO and District Magistrate/collector and a copy to State Programme Officer. Based on the monthly report, Rs 35000 per month will be paid for 3 months from the CMO office post approval.

2. **District Social Mobilization Coordinators:** To ensure coordination at the district & block level, the District Social Mobilisation Coordinator will be deployed at the district level for three months for the MDA.

Roles and responsibilities

PRE MDA (70 days)

- Lead the social mobilization component and prepare district mobilization plan.
- Develop IEC distribution plan for each block based on the number of health facilities and Front-Line Workers and Coordinate with the IEC, print and mass media division for visibility of MDA campaign.
- Participate in the District Coordination Committee and Block Coordination Committee meeting (wherever possible)
- Facilitate session on Social Mobilization during district Training of Trainers and monitor the block level training of DAs and supervisors.
- Assist CMO for timely printing of the family registers, IEC materials and timely availability at the blocks.
- Coordinate with the Municipal Commissioner and health team and plan for urban mobilization. Prepare miking plans and urban micro plans. (Miking, hoardings, banners, posters, etc.)
- Coordinate with all the existing channels and platforms, activate them for MDA mobilization (Self-help groups, PRI members, teachers, and other influential people)
- Update the MDA Preparedness and social mobilization efforts to the District Magistrate and other officers every week and undertake field visits as and when required in consultation with CMO.
- Collate data from each block and share the status with the concerned district heads/point persons and share updates from the Block Social Mobilisation Coordinator every week and share the same with the CMO.
- Attend all the review and planning meetings at the district and blocks (wherever possible)

DURING MDA (15 days): Review Social Mobilisation concurrent monitoring findings for the blocks and provide support to the blocks who are showing low coverage.

Attend the evening debriefing and share the findings of concurrent monitoring data ; Analysis of daily refusals, never treated, missed out areas based on reports and evening meetings.

POST MDA (5 days) - Support the Post MDA Assessment survey on Social Mobilisation.

Experience and skills required

- Postgraduate in Public health, social sciences/sociology/any PG degree with experience of coordination, conducting effective training, monitoring of VBDs, and data management at the district/state level under health or community mobilization programmes. S/he should have the ability to coordinate with the district leaders- District Magistrate/Collector, Chief Medical Officer, District Vector Borne Disease Officer, district level officers from rural development, education, panchayat, labour, tribal, minorities and partners and preference will be given to the persons earlier worked in implementing social and community mobilisation activities.

Report and Remuneration: The District Social Mobilisation Coordinator should share daily report in the prescribed formats– Plan vs Accomplished with the CMO/CS/DMHO and District Magistrate/collector and a copy to State Programme Officer. Based on the monthly report, Rs 1000/- per day will be paid as the remuneration (monthly) for three months from the CMO office post approval.

S/he will fill in the following reports a) Social Mobilization Base Format within a week of joining b) IEC distribution plan for each block, c)District mobilization plan, d) Field Monitoring checklist and e)Monthly reporting format

3. **Block Monitoring Coordinator:** The Block Monitoring Coordinator will be stationed in the identified high risk and high priority blocks/IUs/Urban areas of the district and will be working closely with the PHC/CHC medical officer and his team to support MDA campaign and reports to the District Monitoring Coordinator and CMO/CS/DMHO.

Key roles and responsibilities

- Preparation of Timeline for block in lieu of District Timeline.
- Plan for each batch training of DAs (ASHA, AWW, ANMs) & Supervisors and track absentees and plan for their trainings.
- Facilitate Block task force meeting and documentation of minutes and coordination with other department – Education, ICDS (Anganwadi dept.) & Panchayati Raj / Nagar Nigam.
- Support the block in preparation and review of Micro plan and ensure printing and distribution of plan to all teams.
- Preparation of block level monitoring plan including -poor performing areas as per last round, high endemic areas, or high MF positive areas
- Monitoring of MDA activity with focus on hot spot areas and poor performing areas of last round and plan source reduction activities.
- Facilitation of preparation of communication plan for high refusal area based on previous round along with logistic collection from District and timely distribution of logistics to the teams.
- Block level inauguration facilitation.
- Monitoring of 4 – 5 teams / day along Rapid convenient monitoring of previous day work from 2nd day of activity onwards.
- Facilitate Block level evening meeting under chairmanship of medical officer in charge.Review and analysis of family registers during evening meeting for missed areas, never treated, refusal, permanently locked houses etc.
- Facilitate collection of report and submission to District on daily basis.
- Planning for mop up post round based on the review of family registers and monitoring of mop up activity.
- Collection of block specific data asper formats and submission to District.
- Participation in Community Evaluation Survey activity of medical colleges with target of 2 to 3 cluster per day.
- Planning for MMDP activities to be carried throughout the year including linkage of hydrocele operations to District hospitals / Medical colleges.
- Ensure timely release of Funds to DAs within 1 week of activity.
- Daily reporting to concerned MOICs or block level officials and with district coordinator and DMO/ DVBDCO/PO post approval.

Report and Remuneration: The block monitor should share daily report in the prescribed formats – Plan vs Accomplished with the CMO and concerned MOIC at the block level. Based on the deliverable report, Rs 10000/- per month will be paid as the remuneration (monthly) for three months from the CMO office.

S/he will fill in the following reports a) Block MDA preparedness checklist report, b)Training report c0Concurrent and consequent monitoring reports as per formats and d)Daily update on the MDA progress.

4. **Block Social Mobilisation Coordinator:** To facilitate communication at the block level, Block Social Mobilisation Coordinator will be deployed at the block level for three months for the MDA. For effective support, it is advised to deploy the block social mobilization coordinator two months before Mass Drug Administration. This position will work under the leadership of CMO/CS/DMHO/DVBDCO.

Key roles and responsibilities

PRE MDA (70 days)

- Lead the social mobilization activities at the block level.
- Develop a block mobilization plan- Participate in the Block Coordination Committee meeting.
- Attend District Training of Trainers.
- Coordinate with the block level offices for MDA mobilization.
- Attend monthly meetings in the education and panchayat department to plan out MDA mobilization.
- Develop the training plan for the drug administrators (DA) and the supervisors and conduct training of the DAs and supervisors on IPC and social mobilization and undertake monitoring visits in the block.
- Sensitise the school children and teachers on MDA campaign and monitor and conduct school level competition (Essay/drawing, etc)
- Collaborate and Engage/support the ASHA supervisors to complete the micro plans and with the health sub-centers for IEC materials- distribution and display.
- Update the mobilization status to the concern point person (education, SRLM, ICDS, BDO) and the MDA Preparedness to the CMO every week.

DURING MDA (10 days)

- Review concurrent monitoring findings for the blocks and provide support to the blocks who are showing low coverage; Attend the block level evening debriefing and share the findings of concurrent monitoring data.

POST MDA (10 days): Support the Post MDA Assessment survey.

Experience and skill set: Graduate in social sciences/sociology/ mass media/arts/sciences with experience of community mobilization (group formation, school interventions, ASHA training, volunteer program) at the block/district level. S/he should be able to coordinate with the Government block and district officials. Any person who has worked with programs like Social Mobilization Network, pulse polio, SRLM, External Monitors, NGO run projects will be given priority. Students who have volunteered as NSS and NCC candidates during the previous MDAs will also be considered as potential candidates. The identified Block Mobilization Coordinator will be trained at the district level by the LF partners (WHO/PCI) in consultation with the CMO/ DVBDO.

Report and Remuneration: The BSMC should share daily report in the prescribed formats – Plan vs Accomplished with the CMO. Based on the deliverable report, Rs 12000/- per month will be paid as the remuneration (monthly) for three months from the CMO office.S/he will fill in the following reports a)Block mobilization plan, b)Field Monitoring checklist and c)Monthly reporting format.

5. **Supervisor at Village level:** The Supervisors at village level will ensure daily reporting and overall completion of activity by Drug Administrators. They will facilitate training, drug provision, and resolve logistic issue at the field. One supervisor will be allocated over 5 - 10 teams. S/he will also ensure accountability of Drug Administrators and ensure that details team micro plans are prepared, reviewed, and submitted to block officer before each MDA round. For the states, that did not propose the supervisor honorarium in the PIPs can include for the 10 high risk and priority blocks of the district.
6. **Social Mobilisation Coordinator at Panchayat level:** To ensure coordination at the block level with a focus on engaging the panchayat leaders, one human resource will be deployed at the block level for forty-five days. For effective support, it is advised to deploy the social mobilization coordinator forty days before Mass Drug Administration. This position will work under the leadership of the CMO/DVBDCO.

Key roles and responsibilities

PRE MDA

- Lead the social mobilization activities at the panchayat level.
- Participate in the Block Coordination Committee meeting.
- Develop a panchayat wise mobilization plan for the block.
- Organize a planning meeting with the panchayat leaders- Mukhiya/Pradhan/ward members/ Sachiv's under the chairmanship of Block Development Officer and coordinate with the Panchayat leaders- Mukhiya/Pradhan/ward members/Sachiv to organize mobilization activities.
- Leverage existing collectives like milk cooperatives/Kisan clubs/Kishori clubs etc. for MDA mobilization.
- Collaborate with the health sub-centres and engage the ASHA in developing the micro plans and with the health sub-centres for IEC materials- distribution and display.
- Update the MDA Preparedness to the BDO/MOIC/DVBDO/CMO every week and undertake monitoring visit in the block.

DURING MDA: Ensure all the pradhans inaugurate the MDA and consume drugs in a community meeting; Undertake joint observation visits along with the Panchayat leaders- Mukhiya/Pradhan/ward members/Sachiv and take action to strengthen MDA; Mobilize the Panchayat leaders- Mukhiya/Pradhan/ward members/Sachiv to review the coverage and compliance with the ASHA supervisors.

Experience and skill set: A person who has experience of community mobilization (group formation, school intervention, Asha training, volunteer program) at the panchayat and block level. S/he should be able to coordinate with the panchayat leaders and motivate them for MDA mobilization. Any person who has worked with programs like Social Mobilization Network, State Rural Livelihood Mission, External Monitors, NGO run programs will be given priority. Students who have volunteered as NSS and NCC candidates during the previous MDAs will also be considered as potential candidates.

Report and Remuneration: The SMC at Panchayat level should share daily reports and fortnightly deliverable report in the prescribed formats – Plan vs Accomplished with the MOIC/CMO. Based on the deliverable report, Rs 800/- per day will be paid as the remuneration.

To ensure extensive reach, awareness generation and prepare communities for consuming anti filarial drugs. Mission Steering Group has approved additional support for social mobilization activities. This additional support will be deployed at district, block, and panchayat levels for the purpose of social mobilisation activities.

At district level:

- District Social Mobilisation Coordinator: At a rate of Rs 1000 per day for three months

At block level (for ten high risk and priority blocks/IUs of the district only)

- Block Social Mobilisation Coordinator: One per block @ Rs 12000 per month for 3 months.

At Panchayat and Village level (for ten high risk and priority blocks/IUs of the district only)

- Supervisor at Village level: Honorarium for supervisors involved in MDA @ Rs.600/- for days of MDA.
- Social Mobilisation Coordinator at Panchayat level: One per block @ Rs 800 per day for 45 days

(Note: The criteria for the selection of 10 blocks/IUs in a district: High risk and high priority blocks/IUs including urban areas in a district should include: 1) High Mf rate, 2) poor compliance to MDA in last two rounds 3) hard to reach area 4) high level of refusals for MDA drugs.

Chapter-9

MONITORING AND EVALUATION OF LYMPHATIC FILARIASIS PROGRAMME

- Monitoring is guided by the principle of supporting the programme and making it more efficient in terms of preparation, implementation and improving outcome.
- Microfilaria Survey measures the impact of MDA to have the first level indication of reduction in Mf prevalence in the community across two surveillance sites.
- Additional Mf survey is to validate the status of Mf rate, each block will identify and conduct mf survey across 3 additional random sites.
- Periodically share the programatic information and deliverables to track the progress and facilitate the decision-making process.
- Transmission Assessment Survey is a tool designed to know whether transmission is interrupted by MDA and therefore this is the true evaluation of MDA.

9.1 Introduction - Monitoring of MDA round

Monitoring & Evaluation of the ELF programme is an inbuilt component to help monitor the process indicators as well as assess the impact of the programme that helps to make evidence-based programmatic decisions to strengthen the programme implementation. It also addresses the gaps with corrective measures, captures the information on MMDP service for people with lymphedema and hydrocele. It also helps to take decisions on the interruption of transmission in selected geography.

The programme needs to be monitored continuously throughout the cycle of implementation from planning to the post MDA phase which comprises of three phases.

- Pre-MDA monitoring or preparedness assessment.
- During MDA round or concurrent monitoring.
- Post MDA assessment or evaluation.

9.1.1 Pre-MDA monitoring or preparedness monitoring

With the fixed day MDAs i.e. 10th Feb and 10th Aug every year, it gives an opportunity to the programme for advance planning. The state should start the advance planning 4-6 months prior to MDA dates as per the LF pre-MDA planning tracker provided by NCBVDC. The LF pre-MDA planning tracker is a useful tool to be used by the states, districts, and blocks to plan and track various components such as governance, supply chain, training, SBC etc for effective implementation of MDA. The purpose of the tracker is to create national/state/district level views and generate alerts on the preparedness of states for MDA rounds. This tool helps in planning, tracking important activities to be completed before MDA and to take necessary measures to address the gaps.

The state and district/block enter in actual dates of completion of each activity and sub activities against the envisaged dates as per programme norms. This will provide information regarding the extent of adherence to envisaged timeline and delays in three color coded sub-categories- 'Within acceptable limit' (Green), 'Moderately delayed'(Yellow) and 'Highly delayed' (Red).

The teams and individuals visiting the field for reviewing and assessing the preparedness activities at the block, district and state level, should **use format for monitoring of preparedness at Planning unit (Block/Urban) on Mass Drug Administration as per Annexure 7**. Based on the assessment, mid-course corrections need to be initiated at all the levels. A prior, systematic, and well- planned preparedness exercise ensures that enough time is available to identify and address those gaps before conducting MDA round.

9.1.2 Supervision of MDA

A detailed supervision plan should be made before the start of MDA in any given village/ward. Supervision plan must be finalized and submitted along with the detailed micro plan. Details of allocation of Supervisor to the DAs must be completed and included in the micro plan. Sector supervisor and the nodal persons should also be identified well before the MDA and all sector supervisors and nodal persons must be briefed about their role and responsibilities. Sector supervisors must finalize their supervision plan in consultation with the supervisors and a copy of the supervision plan must be submitted to the block PHC along with the micro plan before starting MDA.

The Supervisor for MDA could be ASHA facilitator, ANM, MPW, Health Assistant Male & Female. In addition, the supervision or monitoring plans need to be prepared at Block level, Urban areas, district and State level with details of constitution of teams and travel plans and monitor the activities as per the templates mentioned in Annexure 3 and 8.

9.1.3 During MDA round

Daily supervision by DA Supervisor

The Drug Administrator Supervisor (DA Supervisor) undertakes the first level of supervision. The DA supervisors are a part of the government health system at the peripheral level and are assigned with the responsibility of supervising the DA team. All supervisors are to be trained additionally in expected roles and responsibilities at their respective block/ district level. The supervisor will ensure trained DAs, drugs and logistics and ensure no area is missed, especially team areas in peri urban/urban areas, if any areas are found missed should be included by them in the micorplans. The supervisor based on the field observations should provide feedback and extend on-the-job training to address the shortcomings, conversion of refusals in the community and mitigate other operational challenges. The supervisor will discuss with the team about reasons for refusal and provide guidance on planning revisits and engaging the local PRI members, influentials in the community for converting them to accept the consumption of MDA drugs in presence of DA.

The supervisor is expected to cross-check 3-4 houses that include a back check of previous houses covered for MDA. The supervisor should also compile coverage data of the assigned teams and provide feedback to all DA teams as well as to share the summary report with his/ her respective MOIC/ BMO/ MO/VBD consultant for corrective actions to ensure a quality MDA round in the block during daily evening briefing.

The district/block officials, NGO partners will support in training of DA Supervisor, recording and analysis of the data and in providing the required technical or administrative support for the monitoring of the DA teams.

Daily coverage reports

For monitoring purposes, each IU is expected to collect and share day-wise coverage reports for each block from all the supervisors. These reports will be consolidated at the block/district level and then shared with the state and NCVBDC. The coverage against both the total population as well as against the eligible population

should be recorded and reported. States have developed their digital reporting apps for MDA coverage such as CS pro in Uttar Pradesh and Su-kruti app in Bihar, however at the National level the block wise coverage of MDA is to be uploaded on IHIP.

9.1.4 Concurrent Monitoring

The concurrent monitoring is implemented at the time of MDA to assess its progress in terms of whether the process of implementation is in line with the guidelines and whether MDA drugs are reaching the targeted communities. This helps in providing information on two aspects- one regarding availability and working of all recruited DA teams as per micro plan. Secondly to assess the coverage levels across IUs conducting MDA. Thus, it provides insights into the programme and to concerned officers to make necessary course corrections and in providing feedback to DA teams/supervisors and decision-makers with actionable insights.

For this purpose, monitoring teams need to be constituted at

- District level with Civil Surgeon, DVBDCO, VBD consultant, District Programme Manager, City Programme Managers, Chief Development Officer, Municipal Health Officer, Malaria Inspectors, etc to monitor the block level activities.
- At block-level the monitoring teams of government officials comprise of MO/ MoIC, BDO, Malaria Inspectors, Supervisors.
- At State level, state entomologists, State consultants, SRD/RD officers and consultants from ROHFW etc.

At all levels a monitoring plan needs to be prepared and they need to visit the field prior and during the MDA rounds. These monitors use the checklist in the field and observe the MDA implementation and the work of DAs and supervisors and share the observed gaps and suggest actions in their reporting to the district/ state. In addition, the NGO partners also undertake concurrent monitoring using the common formats. The officers /consultants from the national level also undertake monitoring visits to support the government in assessing the ongoing work and take corrective actions.

The checklist for the concurrent Monitoring of the MDA at State/District/ /Block/Urban//village/ward level (Annexure 8).

9.1.5 Reviews and Reporting

Evening Briefing Meetings: Daily evening briefing meetings at various levels are very important for sharing the monitoring findings by Govt officers/partners and ensuring midcourse corrective actions. These meetings should be organized at PHC/UHCs/block level, District & State level chaired by MOI/C, CMO/DHO/Civil Surgeon/CDMPHO etc. & State Programme officer respectively. Minutes/proceedings of the meeting should be circulated to concerned officers the next day. The post MDA review meeting should also ensure that community registers and logbooks are well- organized and stored for the next year.

Table 4.11: Reporting and Reviews

Reports/Reviews	By whom	Review on
MDA implementation and coverage review at Block level (daily during MDA period)	PHC/UPHC/Urban health facility Supervisor/sector supervisor/medical officer concerned	Review the daily performance of DAs, coverage of households, DOTS, refusal households and revisits with outcome, reporting quality, Identify the less drug administration coverage locations, drug usage, stock available, storage
Post MDA review (within a period of 10 days after MDA)	Subcentre/PHC/Ward/ Municipal staff	Identify the less drug administration coverage locations, mopping plan, drug usage, stock available, storage Lessons learnt and challenges
Consolidation and Submission of Reports (within a period of 20 days after MDA)	PHC/Municipality to District Headquarters along with Review Remarks	As per the reporting tables format
Submission of Final Report to the State Programme Officer/ NCVBDC (to be submitted within 30 days after MDA)	District head quarters State Office	Review and consolidation of formats; Submission of concurrent monitoring reports; Post MDA assessment/survey report by medical colleges/WHO/ICMR institutes

9.1.6 Coverage Evaluation Survey

Coverage Evaluation Survey is conducted to find out the actual drug consumption and reasons for non-compliance through checking of such vital questions from a sample of HHs across the district/ block. This survey is led and managed by medical colleges/ WHO. The next chapter explains this post-MDA assessment in detail. The medical college faculty members engaged in the CES need to be oriented and a training and action plan needs to be prepared. The state and districts need to ensure timely release of the funds to the medical colleges, so that they can conduct the CES immediately after the completion of the mop rounds. The details are provided in chapter 10.

9.2. Reporting formats and tables for LF programme data

The programme has revised the existing LF reporting formats considering the revised programmatic needs and strategies such as block-level IUs/ EUs for MDA, Morbidity Management and Disability Prevention, Early case detection and treatment. Many of these formats are being incorporated in IHIP portal.

The reporting formats are attached in the Annexure 9 (9.1 to 9.12) and are being briefly explained below in the table:

Annexure No	Name of the format	Remarks
9.1	Table 1: Update on the distribution of Lymphatic Filariasis	Categorization of the various blocks of the districts into endemic or non-endemic based on the mapping data along with population figures of the blocks
9.2 (2A and 2B)	Table 2 (A&B) Data on Mf survey and pre TAS	2A: This captures the information on Mf surveys across two sites at the block, persons examined and Mf % and 2B: Block level Pre TAS for DA/IDA Survey and needs to update on LF IHIP portal.
9.3	Table 3: Mass Drug Administration (MDA) Coverage	Administrative coverage (DOC) as summarized from the family registers by the DAs. It also captures disaggregated data by age group and gender at IU level. Needs to update on LF IHIP portal.
9.4	Table 4: HR details for the LF	An annual table, that provides data of all staff at various levels, sanctioned, or deputed to work for the LF programme and number trained for MMDP services.
9.5	Table 5: Health infrastructure available for MMDP	Captures data annually on health facilities at district and block level with number of facilities providing MMDP services.
9.6	Table 6: Training of Health Staff for ELF	Captures data on trainings for staff directly involved in the MDA drugs administration such as DAs, DA supervisors, medical officers (MOs) and RRTs.
9.7	Table 7: IEC/SBC Campaign for MDA	Captures the data on IEC and SBC activities. Details on the number of various IEC materials required, received, and distributed.
9.8	Table 8: Post Consumption events or Adverse Events	The data pertaining to adverse events from drugs during MDA campaign along with details. Update the data during MDA on LF IHIP portal.
9.9	Table 9: Stock status of drugs	Reviewing the stock status for all drugs in the MDA round with opening balance, quantity received during the present round, and the quantity used. Additionally, with expiry details
9.10	Table 10: Line listing of Filaria Patients	The table provides data on each Lymphoedema and hydrocele patient and needs to periodically update on LFIHIP portal.
9.11	Table 11: Monthly MMDP report	This is a monthly report to be submitted by each district for all blocks. The table captures new cases reported, cumulative total of Lymphoedema and hydrocele, records grading for lymphoedema, no trained on MMDP, kits given for MMDP, No ADL / acute attacks and no. treated , no of hydrocele surgeries conducted and backlog of surgeries with follow up details
9.12	Table 12: Details of the DCC and SBC meetings	Data regarding all the block level and district level meetings that are organized as part of the planning and review processes with respect to the current round of MDA in each block/ district undergoing MDA.

9.3 Activities and Surveillance after stopping MDA (Post MDA Surveillance)

A successful Transmission Assessment Survey (TAS) in a particular Evaluation Unit (EU) leads to the stoppage of MDA. But this does not mean Elimination of Lymphatic Filariasis (ELF) has been achieved in the EU. Even after MDA has stopped, the LF elimination programme will continue for a further period. National strategy for post MDA surveillance includes activities like:

- Entomological data collection
- Mf survey and periodic screening of migratory population
- Intensification of morbidity management
- Vector control.

Programmes should aim to integrate post-MDA surveillance activities with the existing population-based surveys to minimize the need for long-term resources for LF specific surveillance. Vector control can also be beneficial in lymphatic filariasis programmes in areas where local transmission has been interrupted. The risk for recurrence of LF after mass drug administration has stopped is unknown, but vector control could be a useful strategy to maintain a transmission-free status and reduce the risk for re-introduction.

The states and district officials to leverage the existing entomological surveillance units for VBDs. The entomological surveillance activities need to conduct throughout the year. In addition, coordinate with malaria programme and ensure bed net distribution in co-endemic areas.

Activities for Intensification of morbidity management and disability prevention.

To manage the disabilities due to Lymphatic filariasis and to prevent progression to more advanced stages, people with lymphoedema/elephantiasis must have access to continued care throughout their lives in all the endemic districts. MMDP service must be continued in endemic communities after mass drug administration has stopped and after surveillance and verification of interruption of transmission, as chronically affected patients are likely to remain in these communities.

In post-MDA surveillance, the updating of the line lists must be continued by ANM & Health Worker for both rural and urban areas during their routine field visits.

9.4 Post MDA Surveillance

After the stoppage of MDA, surveillance should be implemented in the following ways:

a. Periodic surveys

Along with the post MDA surveillance activities which are conducted continuously, a series of two post- MDA surveillance surveys (TAS-2 & TAS-3) should be conducted to evaluate whether recrudescence has occurred. Each survey should be conducted after 2 years following the previous survey and should use a similar design to the original TAS.

b. Ongoing Surveillance activities

Ongoing Surveillance includes Annual Entomological Surveillance and Annual Mf survey. Microfilaria (Mf) survey will be periodically conducted in the Evaluation Unit (EU) to indicate absence, presence, or recrudescence of recent LF infection. For each EU, 4 surveillance sites will be selected; 1 Sentinel & 1 Random site each from Urban & Rural area. Random sites will be selected each year. Like Entomological data collection, Mf survey will be done in the same selected surveillance site(s) during October-November each year. A minimum of 50 blood slides are to be collected from each surveillance site in a population/persons above 20 years.

Non-residents (living continuously for less than one year) are to be excluded from the Mf survey. If post-MDA survey results exceed the critical threshold, consult NCVBDC for next steps, potentially requiring more local/ focal MDA rounds a criteria. For entomological surveillance, please refer to Chapter No.11.

During post-MDA period, "testing and treating" for high-risk populations needs to be carried out and all positive cases need to be treated with Directly Observed Single dose of DA or IDA as per the MDA schedule followed by standard treatment with DEC of dosage 6mg/Kg body weight daily for 12 days to be consumed after the meal. If such cases can be followed up easily, repeat testing and treatment if positive could be done.

c. Screening of migratory population

In some EUs, the problem of population migration is common. Such migration, particularly from other LF endemic areas, can initiate a fresh spurt of transmission of LF infection in the EUs where post-MDA surveillance is going on. The health authorities of such EUs should take up the issue with administrative authorities. Provision for screening of migrating population should be done at the time of entry to the Blocks or within one month of entry into blocks. The night blood survey of migratory population should be conducted among the age group of 20 years and above. Support from other allied departments/ministries should be sought for effective screening of such populations.

9.5 Documenting the Best Practices and Lessons Learnt

It is important to share the best practice to identify and share the best way of doing it and then share with others. The practices related to the planning, implementation or strategy adopted while implementing the programme should be documented at all levels. It is important to know and assess what is working well or not in the different contexts, the source for best practice related information may be from the frontline workers, IU staff, district administration, civil societies, allied departments, partner organizations, community groups and individuals.

9.6 Monitoring indicators for LF programme

Indicator	Unit	Unit reporting
Conduct annual Mass Drug Administration (MDA) in eligible districts/blocks/IUs	Number	DA /IDA blocks or IUs & districts -
The proportion of districts/IUs achieving >90 % against the eligible population.	Percentage	DA/IDA blocks or IUs &districts --
State Task Force / Coordination meetings under MD NHM for MDA. District Task Force/Coordination meetings under District Collector/ Magistrate for MDA	Number	State: District
% of PHCs in the endemic districts providing MMDP care (Total no of PHCs providing MMDP care/Total number of PHCs)	Percentage	% of PHCs providing MMDP care
% of total lymphoedema cases provided with MMDP kits (MMDP kits distributed/ Total lymphoedema cases)	Percentage	% Lymphoedema cases provided with MMDP kits -
% of hydrocele surgeries conducted (Hydrocelectomy done/Total hydrocele cases)	Percentage	% Hydrocelectomies
Cumulative number of endemic districts which achieved mf rate <1% verified by TAS1 (%)	Nos. (%)	
Cumulative number of districts to achieve Disease Free Status- LF as per TAS 3 Clearance (%)	Nos. (%)	

Chapter-10

COVERAGE EVALUATION SURVEY

- MDA assessment to be conducted using Coverage Evaluation Surveys (CES) at the block level.
- From each block select, 4 sub centers/municipal area and 4 villages/urban areas using random sampling.
- Each block needs to conduct interview of 30 households in 4 selected areas i.e 120 households (4*30)
- The assessment should be completed preferable within 6 weeks after MDA so that the community will be able to recall the events without memory lapse.

10.1 Introduction

Assessment and analysis of MDA implementation will be helpful to identify coverage compliance and the reasons thereof for noncompliance. This will enable the programme to overcome shortcomings and improve the MDA implementation next year. Mostly, the MDA programmes depend upon the surveyed treatment coverage rates assessed through treatment coverage evaluation surveys (WHO, 2011) in representative blocks to judge the strength of the programme implementation. This is often supplemented with a collection of data on people's awareness of the programme, during the coverage surveys. WHO also conducts concurrent and consequent monitoring evaluations, and the data can also be used to review the activity. While the standard methodology is available to conduct coverage evaluation surveys, questionnaires need to be prepared to collect qualitative data. The coverage evaluation survey details and qualitative data questionnaires are presented here.

10.2 Coverage Evaluation Survey

Achieving and sustaining good treatment coverage in MDA rounds is crucial to the success of LF elimination programmes. Low coverage may necessitate additional MDAs or if unnoticed, may lead to premature impact evaluations. Drug coverage is defined as the proportion of individuals who have ingested a drug or combination of drugs.

Surveyed Treatment Coverage (Compliance rate) is calculated by dividing the total number of individuals reporting to have taken the drug(s)/consumed in front of the Drug Administrators by the total number of eligible populations during the MDA. Although the main purpose of coverage surveys is to validate reported drug coverage, these surveys also provide an opportunity to collect information and data on other areas of interest, such as MDA delivery, sex, and age-specific coverage, drug adverse events, reasons for non-compliance and health education strategies (Worrell C and Mathieu, 2012).

Ideally, coverage evaluation surveys should be carried out as early as possible to ensure good recall among community members participating in the MDA programme. Hence, the treatment coverage evaluation surveys should be carried out within one month of concluding the MDA programme implementation. The objectives of the coverage evaluation survey under NPELF are as follows:

1. To independently get coverage and compliance and to find out the reasons for non-compliance among the households surveyed.
2. To recommend corrective measures to enhance the DOC coverage in future rounds of MDA.

Coverage evaluated coverage data will be used to take decisions for stopping the MDA, and the coverage evaluation surveys will be carried out in the maximum number of MDA Implementing Units. Efforts should be made to complete the survey with a budgetary allocation of Rs. 35,000 per district which is provisioned under the state PIPs. This may be accomplished by enlisting the support of medical colleges and research institutions.

10.3 Methodology and Process

Coverage surveys are conducted in the MDA implementation unit (IU) level, commonly a block/s of a district. Because surveys are not meant to provide an annual assessment of drug coverage in each IU, only a proportion of representative IUs are included in the coverage evaluation survey. Coverage evaluation surveys are meant to assist program managers in confirming if the reported treatment coverage is unbiased and if the programme needs improvement.

10.3.1 Steps in selection process

Step 1 (Selection of blocks/Implementing Unit): In a district, a total of five implementing Units (can be a Block/CHC/PHC/UPHC or Municipality/Mandal based on the list submitted by the state to NCVBDC for MDA) are to be selected purposively based on the reported coverage or DOT Coverage data (Compliance) in consultation with the concerned state/district officials. Selection of Implementing Unit can also be done based on the WHO monitoring data (wherever available) that reported high distribution percentage.

In each district, five Implementing Units are to be selected, out of which one should be urban. If there are more urban blocks in a district, the selection of the implementing units needs to be according to the proportion of the urban to the rural population. If the district has less than 5 Implementing Units/blocks, then all the IUs/ blocks need to be selected for Coverage Evaluation Survey.

Step 2 (Selection of Sub centers/urban area): In the selected implementing Unit, three sub-centers are to be selected from the rural area and one ward from an urban area. This needs to be selected randomly from the overall list. In case, if the implementing Unit is an urban area, then select four wards randomly from the list of all the urban wards.

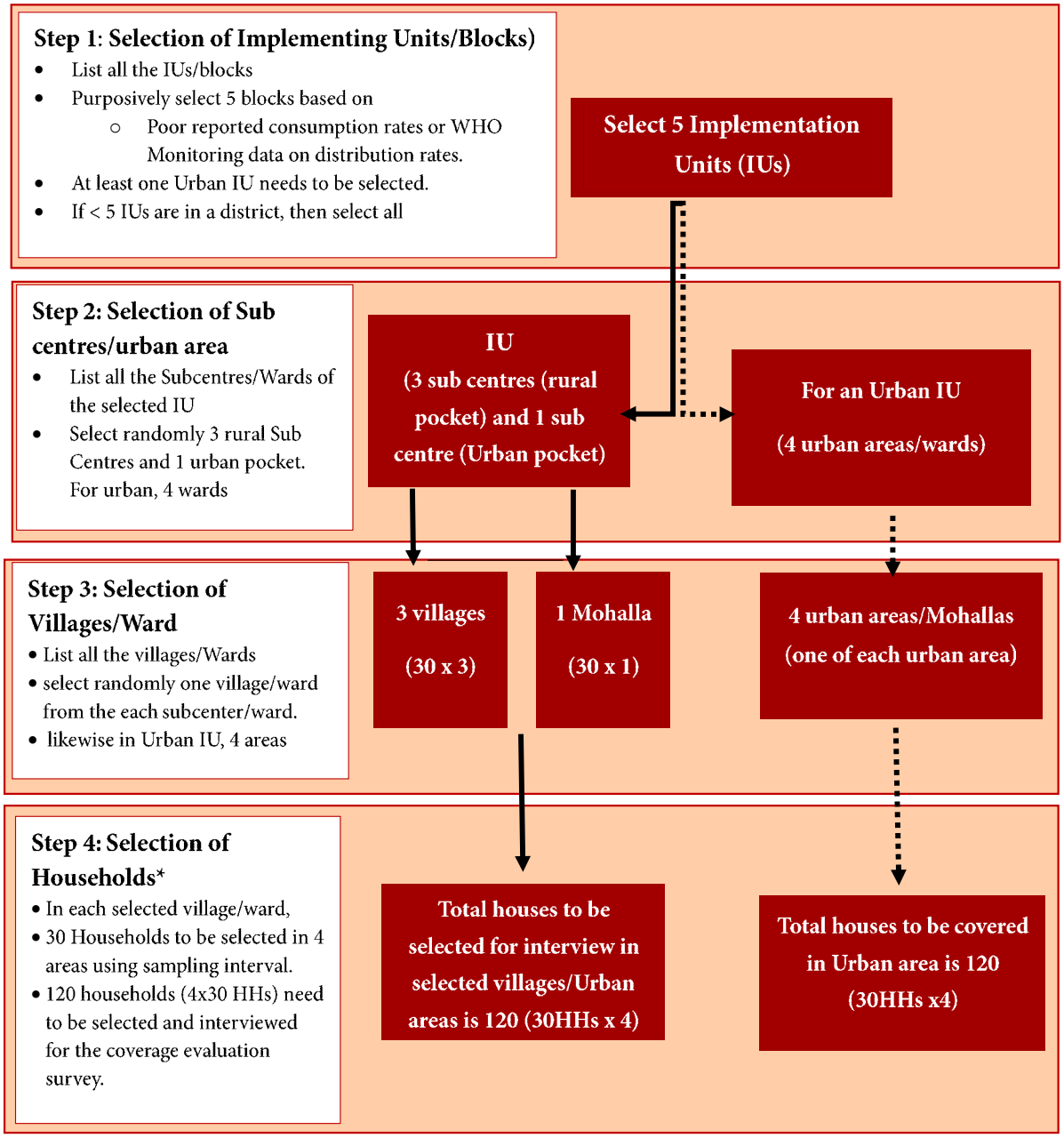
Step 3 (Selection of Villages/Ward): Out of the four sub-centers selected randomly, select randomly three villages and one urban ward from the list of villages/wards. (One Village from each sub-center/Ward). But, if it is an Urban IU, select all 4 urban areas/Mohalla from the list of all urban wards.

Step 4 (Selection of Households): In each implementing unit, 120 households (4*30 HHs) need to be selected and interviewed for the coverage evaluation survey. 30 households from each village or ward.

Calculating the sample interval: Once the villages/wards or urban areas are selected, Systematic random sampling needs to be used for the selection of 30 households in each village/urban area.

For a desired sample size of the households, assign a regular interval number (Dividing the total households of that selected village/urban with 30 households) to arrive at the sampling interval for the selection of households in the respective village for conducting interviews. Based on the sampling interval 30 households were to be interviewed. For example, if the village/urban area is having 275 households, then divide the total households with a desired sample size of 30, your fixed interval would be 9 and so every 9th household needs to be interviewed i.e. 9^{th}, 18^{th}, 27^{th} ,36^{th},45^{th}, 54^{th} ……. And so on.

The following table provides a summary of steps to be followed for conducting coverage evaluation survey.



***Sampling Interval:** Divide the number of households by 30. For example, if there are 275 households, then it will be 275/30 = approx. 9. Hence, every 9th household will be surveyed (9,18,27 etc.). If the respective house is closed, move to the next house.

10.3.2 Conducting Interviews of the selected households

Interview all family members in the selected house & note findings in the attached format. For example, in a household, if there are 5 members, all 5 members should be enumerated, and the data collected for all five individuals. Even if some household members are not present at the time of the survey, their drug consumption details should be collected from the person interviewed by the survey team. If the selected house is locked or no one is available to share information, visit the immediate next house and conduct the interview and complete 30 houses in each village.

Interview of individuals: In each selected household, the interviewer should extend greetings and introduce himself/herself to the head of the household. He should explain the purpose of the survey clearly and in simple language. Using the survey form, fill in all the names of the household members in the survey form and solicit information on treatment details and fill in the information for each individual.

The master sheet of data collection format needs to be submitted along with the report as an annexure.

10.2 Format for data collection – DA/ IDA districts and the data collected sheet needs to be shared along with the report.

HOUSEHOLD SURVEY TO MEASURE COVERAGE IN MDA FOR LF

Interviewer Name: State - District: Block - Area - Rural/Urban

PHC / Urban PHC: Subcentre/ Ward: Village/ Urban Mohalla

Background								Medicine 1: Albendazole				Medicine 2: DEC				Medicine 3: Ivermectin (if applicable)				Side effects	Awareness			
Sr. No.	HH No.	Name of the family member	Sex (M/F)	Age (Years)	Education (Put No. as mentioned # below)	Information given by self (S) or family member (FM)	Including this year, how many times have you taken the drugs for LF? (Never/1/2 or ≥2)	Offered the medicine? (Y/N/DK)	Reason not offered	Chewed & consumed the medicine (Y/N/DK)	Reason DID NOT consumed	Offered the medicine? (Y/N/DK)	Reason not offered	Consumed the medicine (Y/N/DK)	Reason DID NOT Consumed	Offered the medicine? (Y/N/DK)	Reason not offered	Consumed the medicine (Y/N/DK)	Reason DID NOT Consumed	Any Adverse events reported after consuming (Write the code)	Did you receive any prior information about MDA round (Y/N)	Have you heard about LF (Y/N)	If yes, Source (Multiple answers)	How LF is caused

DK - Don't Know, HH - Household, N - NO, Y - Yes

Education: 1. No Formal Education, 2. Primary (1-4 std), 3. Secondary (5-10 std) 4. Higher Secondary (11-12), 5. Graduation, 6. Post Graduation

Reason treatment was not offered - 1=Underage, 2=Pregnant, 3= Breastfeeding, 4=Sick, 5=Absent, 6=Didn't hear about the MDA, 7= Ran out of medicine, 8=Nobody came, 9= Other

Reason Treatment was not consumed - 1=Fear of side effects, 2=Bad taste, 3= Not Sick, 4= Not enough information given, 5= lots of tablets, 6 = Other

Side effects: 1. Fever/ 2. Headache / 3. Body pain/ 4. Vomiting / 5. Nausea / 6. Abdominal Pain / 7. General Weakness / 8. Skin Rash / 9. Others (specify)

Source: a) DA (ASHA/AWW/ANM/VOLUNTEER) b) School going child/Teachers/SHG Members/PRI Members/Action Katedarf/Filaria/hydrocele Patients/Religious leaders/Rally/Miking/Announcement/Banner/Poster/Wall writing/Newspaper/WhatsApp message/Other speci[illegible]

Cause of LF: Through mosquito bites[2] Through air[3] Worms in the blood[4] Genetic[5] Through contaminated water[6] Living with an infected person[7] Don't know[8] Other (specify)

10.3.3 Survey Team and field work:

The survey teams should arrange all the logistics necessary to implement the survey and start the fieldwork. As indicated earlier, ideally, the survey should be carried out within one month after concluding the MDA programme (mop up) in the district.

To ensure an independent coverage evaluation survey, the team members/interviewers should be selected from among medical colleges or research institutes. For each implementing Unit/ block, one team is assigned with 2 members for conducting interviews and one supervisor and accordingly the teams can be formulated. The team members should be able to communicate in the local language with reasonable interviewing skills. Each team will cover 1 village/urban area (30 houses) in a day, So, a survey will be completed in 4 days for that block by each team.

Training: All interviewers and supervisors should be trained by the district programme officer/ partner agency coordinators if available in the State. Topics addressed during the training include the purpose of the survey, sampling methodology and questionnaire administration. The duration of the training should be at least one day with some practical field exercises and role plays. This is to ensure that all interviewers understood the survey methodology and the questionnaire is administered in a standard fashion.

Data analysis: Once the data is collected from each block/IU, it is important to organize the data in a way that makes it easy to work with. This involves cleaning the data to remove any errors or inconsistencies, converting data into a common format, and/or structuring data into a table or excel spreadsheet. The organized data and analysis need to focus on the objectives of the coverage evaluation survey and align with the relevant collected information and choose appropriate analysis methods and conduct the analysis by identifying patterns, relationships, and trends in the data, and drawing conclusions about what the data reveals. The suggestive indicators are:

- % People received drugs
- % People consumed drugs
- % People have not received even single dose till date (Never treated)
- Reasons for not consuming drugs
- % Family members with side effect after consuming drug
- Awareness about MDA and LF

10.4 Suggestive Reporting Template

The outline for CES reporting is suggested below:

- Introduction (LF endemicity of the state, district, and blocks and LF programme)
- Objectives of CES
- Methodology
- Results
- Summary and Recommendations

Chapter-11

VECTORS OF LYMPHATIC FILARIASIS AND THEIR MANAGEMENT

11.1. Introduction

In India, Lymphatic filariasis (LF) is caused by two parasitic species of parasitic worms: *Wuchereria bancrofti (W. bancrofti)* and *Brugia malayi (B. malayi)*. These worms have generally similar life cycles, refer Chapter 1.2 for epidemiology. *W. bancrofti* is the most predominant infection, accounting for 99.4% of cases in the country which is primarily transmitted by *Culex (Cx.) quinquefasciatus*, except in Andaman and Nicobar Islands, where it is transmitted by *Aedes (Downsiomyia) niveus*. *B. malayi* is transmitted by both *Mansonia (Mn.) annulifera* and *Mn. uniformis*.

Vector management is perceived as an important strategy for LF elimination. It was an integral part of erstwhile National Filaria Control Programme. The primary objectives of vector management are to reduce the density and survival of infected mosquitoes, interrupt disease transmission and ultimately prevent new infections in humans. This chapter aims to provide an overview of vectors and key components of their management for elimination of LF and preventing further transmission. It highlights vector bionomics, surveillance and vector control approaches.

11.2. Vector morphology & bionomics

Vector morphology and bionomics encompass study of the physical characteristics, behavior, and breeding ecology of the mosquitoes responsible for transmitting LF. Understanding the morphological characteristics of LF vectors is essential for accurate identification and differentiation from other mosquito species. These distinguishing features aid in targeted vector surveillance and control measures for effective LF management. Understanding of bionomics is important for planning effective vector control strategies and interventions.

11.2.1. *Culex quinquefasciatus*

11.2.1.1 Morphology of Culex quinquefasciatus

Cx. quinquefasciatus is the most common mosquito and is about 3.96 to 4.25 mm long. Female mosquitoes normally fly for about a kilometre from breeding place and remain close to breeding habitats and host sources. Males are weak fliers and are found near the breeding sources. This species is associated with human beings, rest inside houses and highly anthropophagic. It bites indoor, biting activity starts after sunset and bite throughout night with peak in the mid night. After blood meal they rest in cooler places indoor. Average life of female mosquito is about a month with males having the short life span, usually less than 10 days. The life cycle of Culex mosquito from egg to adult stage takes about a week to complete in conducive environmental conditions.

11.2.1.2 Life cycle

Egg: *Cx. quinquefasciatus* mosquitoes lay their eggs on the water surface. One brood comprises about 150-300 eggs, which are tightly bound together in a boat-shaped structure, called as raft. The female Culex mosquito lays eggs approximately every third night throughout its adult stage. After 24-48 hours, the eggs hatch and free-swimming larvae emerge.

Figure 11.1: Culex quinquefasciatus egg raft

Larva: The larvae have a short and stout head, an abdomen having eight segments, a siphon, and a saddle (Figure11.2). The siphon is located on the dorsal side of the abdomen and is four times longer than it is wide. The siphon has more than one pairs of sub-ventral tufts of hairs and it is used for breathing air from the water surface. The larvae hang upside-down with an angle from the water surface. The larvae are very active and are often called "wigglers". They feed on a variety of microorganisms, including microalgae, in water. The larvae pass through four stages of development known as instars (I, II, III & IV). The larval stage is completed in approximately seven days. Towards the end of the fourth instar, the larvae stop eating and molt into pupae.

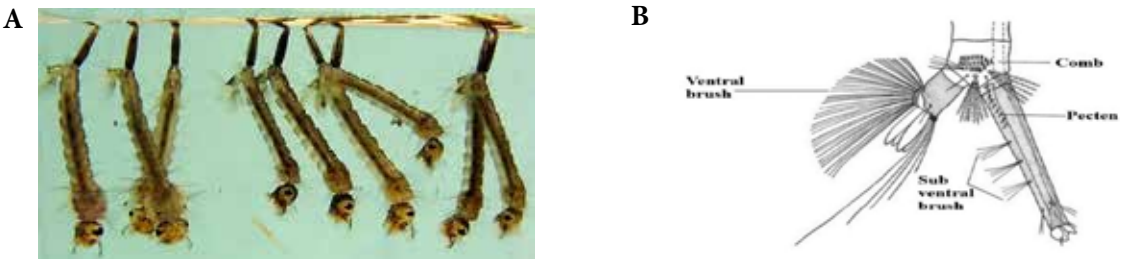


Figure: 11.2 (A) Culex larva hanging position and structure of siphon

Pupa: The IVth instar larva undergoes metamorphosis to transform into a pupa. The pupa is comma-shaped and has a breathing tube. The pupa is a non-feeding stage and is usually inactive.

Adult: Adult mosquitoes medium-sized and are terrestrial. After emerging, they rest on the surface to allow its body and wings to dry and harden before the mosquito takes its first flight. Females primarily feed on human blood for egg development, while males feed on plant sap or nectar. *Cx. quinquefasciatus* bites at night-time and is mostly indoor feeder. It is highly anthropophilic but also feeds on cattle (zoophilic). It rests both outdoor and indoor (exophilic and endophilic). The thorax, legs and wing veins are covered with pale colored scales. The abdomen is predominantly covered with brown or blackish scales across most segments. The tip of the abdomen is rounded in female and pointed in male. In females, the palps are significantly shorter than the proboscis, whereas in males, the palpi are approximately equal or greater than proboscis. The adults can fly upto 3 km.

Figure: 11.3 (A) Adult Culex quinquefasciatus, *(B) Difference between Male and Female*

11.2.1.3 Breeding Ecology

These mosquitoes commonly breed in various polluted water sources including blocked drains, septic tanks, open sewers, cess pits, cess pools, cemented tanks, barrels, puddles, ditches, marshy areas, abandoned pots, pit well, unused wells, stagnated polluted water and rainwater collections.

Figure 11.4: Breeding places of Culex quinquefasciatus: (A) Blocked drain,(B) Cement pit with polluted water,(C) Septic tank drainage (D) Open polluted water

11.2.2 Mansonia

It is a genus of mosquitoes, breed in ponds and lakes containing certain aquatic plants, especially the floating plants like Pistia stratiotes, water hyacinth etc.

Figure-11.4: Mn. annulifera

11.2.2.1 Morphology

Mansonia mosquitoes are large to medium-sized black or brown mosquitoes with sparkling on their wings and legs. Their wing scales are broad and asymmetrical, mixed dark and pale. The body is covered with in broad, dark brown and yellowish scales, which gives a beautiful appearance compare to other mosquito species.

11.2.2.2 Life cycle

Egg: *Mansonia* mosquitoes lay their eggs in clusters attaching them to the undersides of aquatic plant leaves. Eggs are elongated and laid in typical star-shaped raft which makes it easy to distinguish from eggs of other mosquitoes. Normally the eggs hatch within 48 hours.

Larva: After hatching, the larvae emerge from the eggs and live in the water. *Mansonia* larvae have a distinctive appearance with a long, narrow body and a breathing tube (siphon) at the posterior end, which they use to obtain air from air pockets of aquatic plant roots. Immatures use their modified siphons and trumpets to pierce the roots and stems of aquatic vegetation for respiration. They feed on microorganisms and organic matter present in the water.

Pupa: Like other mosquitoes, the larva undergoes metamorphosis to transform into a pupa. The pupa is comma-shaped and also has a breathing tube, which it uses to breathe while hanging at the water surface. Pupa does not feed and remains relatively inactive.

Adult: Once development is complete, the adult mosquito emerges from the pupal case onto the water surface. After resting briefly to allow its body and wings to dry and harden, the mosquito takes its first flight. Male mosquitoes typically feed on nectar and other plant juices, while females require a blood meal to develop eggs. Adults are strong fliers, with a flight range of 1.5-3.5 km. Female *Mn. uniformis* preferentially feeds outdoors on cattle with peak biting between 19:00–20:00, but the species frequently bites man and a wide variety of other primates.

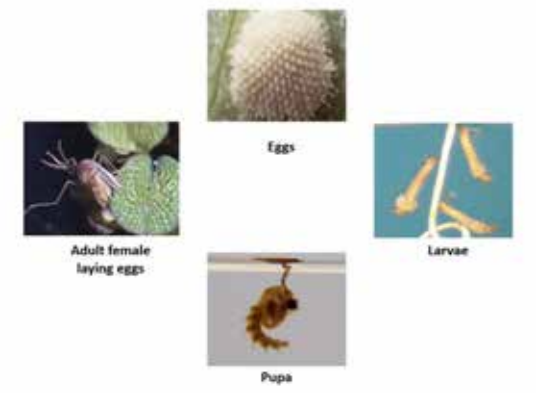


Figure-11.5: Life cycle of Mansonia mosquito

11.2.3 Aedes (Downsiomyia) niveus

Aedes (Ae.) niveus is a day biting mosquito. Though primarily zoophilic, it bites humans as well. It is a vector of sub-periodic *W. bancrofti* in the Andaman & Nicobar Islands.

11.2.3.1 Morphology

Adult Ae. (Downsiomyia) niveus mosquitoes are with black and white stripes on abdomen. The mesothorax covered with silvery scales which makes it different from other Aedes mosquitoes. Femur part of hindlegs of this mosquito are white in colour which is a distinguishing feature.

Figure-11.6 A. Adult Aedes (Downsiomyia) niveus, B. Enlarged mesothorax with silvery scales

11.3 Vector Surveillance

Vector surveillance is vital for monitoring the transmission potential of LF in a locality. This involves regular and systematic collection of data on mosquito distribution, seasonal prevalence, bionomics and infection rates. This information is critical for planning, implementing, monitoring, and evaluating the effectiveness of various vector control interventions. This data should be analysed and interpreted on regular basis to assess the risk of LF transmission. Essentially, vector surveillance provides the scientific evidence required to make informed decisions about the most effective strategies to control mosquito populations and ultimately, LF transmission. It is also important to assess the presence of filarial parasites in vectors by dissecting the adult vector mosquito or by using molecular technique. This data helps in determining the impact of control activities and guide for interventions in the target areas with the highest risk. In elimination settings presence of mf in infected mosquito is indicative for probability of local transmission or any residual foci which needs immediate vector control interventions.

11.3.1 Adult vector surveillance

For study of various aspects of adult vector mosquitoes, samples are collected using various methods. For entomological surveillance has to be carried out from sentinel and random sites based on epidemiological criteria. The selection of sites and different adult collection methods are as follows.

11.3.1.1. Selection of sites for entomological surveillance

For entomological surveillance , two sentinel sites have to be identified on the basis of past Mf survey data one in rural area and one in an urban area. The sentinel site will remain unchanged during the post-MDA surveillance period. Similarly, collection should be made from two random sites one each from rural and urban areas. The random sites should be selected each year afresh by multi-stage random sampling method. From each of the sentinel and random sites, adult mosquito collections should be made from 10 catching stations spending 15 minutes at each station using a flash light and aspirator tube (Hand collection Technique) in the early morning between 6 to 10 am from resting sites in the human and mixed dwellings.

The density of the adult LF vector mosquitoes needs to be calculated for taking programmatic decisions locally and for sharing with the entomology division of NCVBDC (state and HQs) using the prescribed reporting format (EF 2 of the IVM manual). All the female LF vectors shall be dissected to detect the filarial infection (Microfilariae). A minimum of three collections, at an interval of 10 days shall be carried out from each site during October-November.

11.3.1.2. Programme perspective for entomological surveillance

Acquiring LF is a slow process, typically requiring numerous infected mosquito bites over months or years. Entomological surveillance is a critical activity for LF elimination to guide the programme officials in assessing the filaria vector density and infection rate prior or during various programme activities as described below:

1. **Pre-Mass Drug Administration (Pre-MDA):** In the Pre-MDA phase, entomological surveillance is essential for understanding baseline vector dynamics and infection prevalence to guide MDA campaigns. This data is useful for MDA planning, identifying hotspots with higher vector densities and infection rates, if any, for targeted interventions.
2. **Pre-Transmission Assessment Survey (Pre-TAS):** The objective of entomological surveillance during Pre-TAS is to assess if vector infection rates have declined sufficiently to proceed to TAS. LF vectors collection and dissection activities need to be continued between TAS 1 – TAS 2 and TAS 2 – TAS 3.

3. **Post-Transmission Assessment Survey (Post-TAS):** After successful TAS, Post-TAS entomological surveillance is to be carried out to confirm elimination and to monitor potential resurgence in the locality. This should be continued yearly to monitor for the potential resurgence/reintroduction till elimination is validated.

   In areas with high population movement or where vector density remains notably high, post-TAS surveillance has to be prioritized, as these areas are at higher risk of LF reintroduction. Adult vectors are to be dissected to identify parasite stages or xenomonitoring or xeno-surveillance using PCR is employed to detect parasite DNA in vectors. The process of xenomonitoring is briefly described below.

   Currently vector surveillance is being done as part of post MDA surveillance for which funds are being allocated in NHM PIP.

4. **Xenomonitoring**

   Xenomonitoring, also known as xeno-surveillance, is a vital entomological technique in LF elimination. This indirect approach plays a crucial role in monitoring LF transmission and guiding control efforts. Xenomonitoring can directly detect LF parasites within mosquito vectors using polymerase chain reaction (PCR) techniques. This method gains prominence during post-Mass Drug Administration (MDA) surveillance to identify potential resurgence of infections. During xenomonitoring, mosquito samples are typically analyzed in groups (pools), with the pool size depending on the estimated prevalence of infection in the area. The recommended sample size for xenomonitoring is a pool of 25 properly dried gravid, semi-gravid, or full-fed Cx. quinquefasciatus mosquitoes. These samples should be carefully packed and shipped to designated laboratories with detailed information regarding collection date, time, and location. Beyond parasite detection, xenomonitoring also plays a vital role in vector incrimination. To ensure representative data, collection sites to be selected strategically across various locations, considering the inherent variability in LF infection rates among human populations.

11.3.1.3. Adult collection techniques

Hand collection: Hand collections of mosquitoes are performed using an oral or battery-powered mechanical aspirator (Figure-11.7 A&B). Mosquitoes are collected using a torch or flashlight. This method allows for targeted collection of mosquitoes in their resting habitats enabling for their study. This method is used for calculation of man-hour density of adult vectors.

Figure-11.7: Aspirators: (A) Oral aspirator & (B) Mechanical aspirator

Spray sheet collection: Spray sheet collection is a method that involves using a pyrethrum space spray to knock down mosquitoes inside a house. It allows for quantitative studies, including measuring indoor resting density in terms of per room density of adult vectors. This method is useful when mosquito density is very low or not easily detected by other methods.

Human landing collection: As extensive information on the biting and feeding behaviour of LF vector are available, this method is not recommended. The risk of infection of other VBDs prevalent in the area raises significant ethical concerns for the participants when employing mosquito-landing collections.

Trap collection: There are various types of traps used for collecting adult mosquitoes, including attractant traps (such as light traps, CO2 traps, or chemical bait traps) and gravid traps. Traps are used as a surveillance tool when the adult vectors are not easily detected by hand collection method.

11.3.2 Larval collection

The collection of mosquito larvae helps in identifying predominant breeding sites in an area, determining larval density and evaluating the effectiveness of larval control activities. Several methods are available for sampling larvae, however under the programme dipping, netting, and pipetting techniques are used for collecting *Culex* larvae.

Mapping the breeding habitats of LF vectors should be undertaken in each EU. Larval collection needs to be carried out from all potential breeding habitats. During adult collections in sentinel and random sites, larval collection should be carried out in breeding habitats in those areas to asses the impact of vector control interventions.

11.3.2.1 Larval collection techniques

Though several methods are available for sampling larvae, commonly used methods such as dipping, netting, and pipetting are suitable for collecting Culex larvae.

Dipping: This method is commonly employed for collection in larger water bodies. To minimize disruption, the dipper should be gently lowered at approximately a 45° angle (Figure-11.8). It can be skimmed across the water surface or gradually immersed to allow water and nearby larvae to flow into it. Subsequently, larvae can be collected from the dipper using a pipette and transferred to a properly labelled bottle or vial. It is important to note the number of dips taken at each breeding site to calculate larval density, additionally, the time spent on collection should be recorded.

Figure-11.8: Dipping method of larva collection

Netting: The netting method involves using a fine mesh net mounted on a handle, with a plastic bottle or tube attached to one end. It is particularly useful for collecting larvae and pupae in water bodies like ponds and small lakes. The net should be held at an angle of around 45° to the water surface and dragged across it. As the net moves, larvae and pupae can be captured and collected in the attached plastic bottle.

Pipetting: This method allows for targeted sampling in small breeding sites like puddles, hoof-prints and polluted water containers to collect larvae effectively.

Mansonia larvae, which are generally attached to submerged plant roots, can be challenging to collect due to their specific habitat requirements.

The larval density of LF vector mosquitoes needs to be calculated, for taking programmatic decisions locally and for sharing with the entomology division of NCVBDC (state and HQs) using the prescribed reporting format (EF 10 of the IVM manual).

11.3.3. Entomological parameters

For surveillance of filaria vectors, various parameters like vector density, Per dip density for larva, Infection rate, Infectivity rate and Mean number of L3/ infective mosquito are monitored. This helps in planning and data-based decision making for improving the strategies. (Refer updated Manual of IVM for details of calculations). Results are to be maintained properly and analysed timely.

Following parameters are generally used to determine infection in vector and its epidemiological implication:

1. Ten Man-hour Vector Density = $\frac{\text{No. of female } \textit{Cx. quinquefasciatus} \text{ collected}}{\text{No. of man-hours spent for mosquito collection}} \times 10$

2. Per dip density for larva = $\frac{\text{Total number of larvae collected}}{\text{Total number of dips taken}}$

3. Percentage of mf in vector- Understanding the presence of human mf carriers in the vicinity of collection. It is calculated as under:

$$\text{Mf \%} = \frac{\text{Positive for mf stages in adult vector mosquitoes}}{\text{Total number of adult female vectors dissected}} \times 100$$

4. Infection Rate- Proportion of female vectors containing larval stages I &II and developed (III) forms of filarial parasite. It is calculated as under:

$$\text{Infection Rate} = \frac{\text{Number of female vectors with I, II and III stages of parasite}}{\text{Total number of female vectors dissected}} \times 100$$

Significance: Crude index to understand the extent of sources of human infection

5. Infectivity Rate- Proportion of vector females with developed stage (III) only. It is calculated as under:

$$\text{Infectivity rate} = \frac{\text{Number of vector females with III stage alone}}{\text{Total number of vector females dissected}} \times 100$$

6. Average number of infective larvae per infective mosquito

$$\text{Mean no. of L III/infective mosquitoes} = \frac{\text{No. of infective larvae (L III) found}}{\text{No. of infective mosquitoes}}$$

Note - Stages of mf larva: L I- Stage 1 larva or sausage stage larva, L II- Stage 2 larva or pre-infective stage larva and L III- Stage 3 larva or infective stage larva.

Reporting format EF-6 of IVM manual is used for submitting the detailed report of vector dissection to NCVBDC HQs. However, for submission of comprehensive report following format can be used:

Reporting format for LF entomological data

Name of State/UT: Name/Number of EU:
Period of data collection: Date of reporting:

Indices	Sites			
	S-1	S-2	R-1	R-2
10 MHVD@				
Infection rate				
Infectivity rate				
Mean mosquito infectivity				

S = Sentinel site; R = Random site; @ 10 Man-hour vector density.

The annual report should be sent timely to NCVBDC Delhi (to both Entomology and LF Divisions) immediately after data collection. All entomological reports to be submitted on IHIP once it is made operational.

11.4 Vector Control

Vector control is a crucial component in the elimination of LF and depends on the specific vector species and local ecology. As mentioned earlier, it was an integral part of erstwhile National Filaria Control Programme. Integrated vector management approaches combining multiple methods are often recommended for the effective and sustainable control of both larvae and adult LF vectors.

11.4.1 Anti- larval measures

Anti-larval measures, involve identifying and eliminating mosquito-breeding sites to reduce vector populations. This strategy includes activities such as proper waste management, drainage improvement, and the use of biological control agents. Additionally, larviciding, the application of larvicides to target mosquito larvae, can be employed to suppress vector populations in specific breeding sites. The primary LF vector *Cx. quinquefasciatus* breeds in polluted water.

11.4.1.1 Environmental modification and manipulation

Environmental modification and manipulation involve various methods to alter breeding sites to reduce mosquito populations such as removal of vegetation / aquatic weeds, elimination of stagnant water bodies, fluctuating water levels, draining, channelizing, filling of the small pits and ditches. This is a cost-effective strategy for larval control, as it focuses on eliminating habitats known to be conducive for the larvae of filaria vectors. Proper solid waste management, environmental modifications, and improved drainage (without blockage) can help minimize breeding sites and prevent mosquito population growth. Channelizing stagnant pools of polluted water is recommended to prevent *Culex* breeding. For preventing *Mansonia* breeding, aquatic vegetation such as Pistia, *Salvinia*, and *Eichhornia* should be regularly removed from ponds or large water bodies where *B. malayi* is prevalent.

11.4.1.2 Chemical Control

Chemical control involves the targeted application of chemicals for vectors. It includes use of both larvicides and adulticides for specific target vectors. Temephos, used as a larvicide, is suitable for clean water not for polluted water. Insect growth regulators, namely Pyriproxyfen (GR) 0.5% and Diflubenzuron (WP) 25% are currently recommended under the programme which can be used for polluted water based on the operational feasibility of the targeted breeding habitats.

Mosquito Larvicidal Oil (MLO): MLO has been used for a considerable time and remains in use. MLO suffocates mosquito larvae by creating a film on the water surface, cutting off their air supply, blocking their respiratory tubes with oil particles, and reducing surface tension, causing the larvae to drown. *Cx. quinquefasciatus* also breeds in unused wells, cesspits, and soakage pits. MLO can be applied in unused wells, polluted drains & ditches, cesspits, soakage pits etc.

11.4.1.3 Biological Control

Larvivorous fish: Using fish is a natural and environmentally friendly approach to controlling mosquito populations, including filaria vectors. *Poecilia reticulata (Guppy),* the common guppy can survive in polluted water and can be used as a biological tool. Certain indigenous fish species are known to feed on mosquito larvae in polluted water and may be used effectively to control larvae in larger breeding sites. These fishes are self-perpetuating and therefore, is cost effective.

Bacteria: An endotoxin-producing bacterium, *Bacillus thuringiensis var. israelensis (Bti),* is an effective mosquito control agent and is commonly used as a bio- larvicide in vector control programme. This naturally occurring bacterium produces toxins that are lethal to the larvae of various mosquito species, including LF vectors. Currently, two formulations of *Bti - wettable* powder (WP) and aqueous suspension (AS) are recommended under the programme for polluted water. Refer to NCVBDC guidelines for dosage, frequency of various formulations and updates.

11.4.2 Anti-adult measures

Cx. quinquefasciatus is reported to be resistant to most of the insecticides used under the programme. Thus, indoor residual spray (IRS) is not recommended for LF vector control. Some effective adult vector control methods for LF include, personal protection and physical/mechanical methods.

Note: For recommended methods of vector control, dosage and concentrations of insecticides, refer to the updated Manual on IVM and the NCVBDC website, https://ncvbdc.mohfw.gov.in/. Programme officials/ entomologists should refer to this list for approved products. This list is dynamic and updated from time to time.

11.4.2.1 Personal Protective Measures

Personal protective measures are helpful to reduce the risk of LF transmission by preventing mosquito bites.

- **Use of Mosquito Nets:** Sleeping under bed nets prevent mosquito bites during night time. LF vector bites during the night time. LLINs provided by the programme in malaria endemic areas can provide collateral benefits to LF if used properly.
- **Use of Repellents:** Repellents are a commonly used for personal protection against mosquitoes and other biting insects. Household insecticidal products like mosquito coils, pyrethrum space spray and aerosols are used extensively for personal protection against mosquitoes. Electric vaporizer mats and liquid vaporizers are common that are commercially available in open market.
- **Wearing of Protective Clothing:** Wearing of full sleeved cloths helps in reducing the exposure for mosquito bites especially during peak mosquito activity times (dawn and dusk).

11.4.2.2 Physical and mechanical methods

Physical and mechanical control methods aim to prevent mosquito bites and limit their entry into houses. These can be used as supplementary interventions. Here are some examples of these methods:

- **House Improvement:** There are studies indicating maintaining a clean-living environment and proper lighting can help in reducing LF vector mosquito resting in the human dwellings.
- **Screening or use of wire mesh:** Housing improvements by screening or use of iron mesh on doors and windows are usually practiced to block the entry of vector mosquitoes creating a physical barrier. Ensuring intact and properly fitted screens is essential for effectiveness of this method.

For effective vector control community awareness has long been recognized as critical in the prevention and elimination of LF.

Chapter-12

ROLES AND RESPONSIBILITIES OF PROGRAMME MANAGERS, MEDICAL OFFICERS, AND HEALTH STAFF

- The programme managers of LF elimination programme at national, state, district, and block level along with the supervisory staff and the drug administrators will have specific responsibilities on MDA and MMDP for successful implementation of the programme.

12.1 Roles and responsibilities of programme managers

The programme managers of LF elimination programme at national, state, district and PHC level and the supervisory staff and the drug administrators will have several responsibilities on MDA and MMDP. Good teamwork and complimenting and sharing the responsibilities among the team members at different levels is important to effectively implement the multifarious programme activities.

Programme activities	Responsibilities of National Programme Manager	Responsibilities of State Programme Officer	Responsibilities of VBDCO/ DMO/PO at district level
Coordination and management	Coordination with allied ministries and facilitate meeting with national level leadership to update on LF elimination activities and seek support.	Coordination with allied departments and facilitate meeting with state level leadership to update on LF elimination activities and seek support.	Coordination with allied departments and facilitate meeting with DM/DC to update to update on LF elimination activities and seek support.
Organization of meetings and workshops	Constituting the National Technical Advisory Committee. Periodic update with policy making bodies like NITI Aayog Organizing the meetings to formulate/update strategies, policies and guidelines of the programme. Conducting TAC meetings to develop technical guidelines and issues from state programmes. Organizing MDA and MMDP workshops for SPOs, involving experts and resource persons	Constituting the State Technical Advisory Committee. Conducting TAC meetings to provide technical support to districts and blocks. Conducting workshops for VBDCOs/ DMOs, involving experts and resource persons to capacitate staff on programme guidelines.	Constituting the District/Block Coordination Committee Organization of DCC/Block meetings Conducting workshops for PHC medical officers, involving experts and resource persons to capacitate staff on programme guidelines.

Programme activities	Responsibilities of National Programme Manager	Responsibilities of State Programme Officer	Responsibilities of VBDCO/ DMO/PO at district level
Drug procurement	Consolidating the quantity of drugs required for the national programme, and take steps to procure DEC, Albendazole and Ivermectin through standard processes. Providing direction on shipment of drugs to different states.	Estimation of the quantity of MDA drugs and general medicines for management of adverse events required for the state and submit the indent to the Directorate of NCVBDC in time. Collection and transport of drugs from the port to the state headquarters Estimation and procurement and supply of medicines and other commodities required for MMDP activities.	Estimation of the quantity of drugs required based on population of the districts and submit to SPO the details on quantity of drugs required for the district. Assessment of the quantum of general medicines required for adverse events and providing the details to SPO. Collection and transportation of drugs from state headquarters to district headquarters and to different PHCs within the district -Estimation of medicines and other commodities required for MMDP activities and submitting the same to SPO
Training activities	Designing and development of training manuals, training material standard presentations for national, state, district and PHC level programme, in English and Hindi, through engagement of LF experts and training professionals, on MDA and MMDP Organizing national training programme for batches of SPOs and trainers on technical components.	Translation and necessary (minor) modification of training manuals, training material standard presentation. presentations in local language, for state, district and PHC level, on MDA and MMDP Organizing state training programme for batches of VBDCOs/District VBD officers and trainers on technical components.	Develop training calendar. Organizing training programmes for PHC medical officers and senior PHC staff members on MDA and MMDP Share training materials, data on previous MDA indicators in advance with the blocks.
Advocacy activities	Development of broad advocacy guidelines for national, state and district level implementation. Implementation of advocacy activities at national level with focus on media and allied stakeholders. Positioning the LF elimination programme through national print and electronic media channels for MDA programme. Enlisting the support of central ministries, MPs and celebrities to enhance visibility of the programme	Develop advocacy plan for MDA and MMDP. Implementation of advocacy at state level, based on national programme guidelines. Organise media events. Positioning the LF elimination programme through state print and electronic media channels for MDA programme. Enlisting the support of local ministries, MLAs and celebrities to enhance visibility of the programme	Develop advocacy plan advocacy at district level. Organise media events. Engage patient networks as influencers. Enlisting the support of MLAs and high officials and prominent personalities of the district to propagate the programme.

Programme activities	Responsibilities of National Programme Manager	Responsibilities of State Programme Officer	Responsibilities of VBDCO/ DMO/PO at district level
Social Mobilisation activities	Development of broad social mobilization strategies and guidelines and messages with the help of experts and professional bodies Development of prototype of IEC materials by engaging experts and professionals and providing the same to endemic states and union territories	Development and implementation of social mobilization strategies within the state, considering the best practices in other health programmes and local context. Adopting IEC material in local language based on prototypes provided by the national programme and timely sharing it with the districts. Facilitate districts to timely engagement of MSG approved support for MDA	Implementation of social mobilization strategies vigorously within the rural and urban areas of district, with the objective of maximum participation of communities in MDA programme. Distribution of IEC materials to PHCs/UHCs and HSCs. Timely procurement of IEC materials. Develop engagement plan for local NGOs, IMA, IAP, CSR and local clubs. Facilitate timely onboard of MSG support at district and block level.
MDA Implementation	Development and provision of guidelines on MDA implementation and Ensure implementation of MDA as per plan and guidelines. Supervision and support the states in implementation. Periodic reviews prior, during and after completion of MDA with the states Coordination of MDA implementation in endemic states	Coordination and Implementation of MDA in all endemic districts per guidelines of the national programme Timely update of MDA preparedness tracker Periodic reviews with districts and blocks under MDA. Daily review with the districts Undertaking field visits to districts to assess the programme implementation. and providing spot guidance, if necessary	Implementation of MDA in all villages and urban centres in the district/block per guidelines of the national programme Ensure trained teams implement the MDA. Daily review meetings Undertaking field visits to PHCs and villages and assess the programme implementation
Management of adverse events	Development of guidelines on safety of preventive chemotherapy and management of adverse events in consultation with experts in Pharmacology, General Medicine, Public Health, Epidemiologists and Social Scientists Development of guidelines on management and reporting and investigation of severe adverse events	Dissemination of guidelines on safety of preventive chemotherapy and management of adverse events to all districts Dissemination of guidelines on management and reporting and investigation of severe adverse events Providing support to the PHCs and field teams to manage adverse events during the MDA implementation and undertaking field visits, if any severe adverse events occur. Management of media and community concerns if any severe adverse events occur.	Dissemination of guidelines on safety of preventive chemotherapy and management of adverse events to all PHCs Dissemination of guidelines on management and reporting and investigation of severe adverse events to all PHCs Providing active support to drug Administrator teams in the management of adverse events during the MDA implementation and undertaking field visits, if any severe adverse events occur or too many people affected with adverse events in any community. Management of media and community concerns if any severe adverse events occur or too many people affected with adverse events in any community

Programme activities	Responsibilities of National Programme Manager	Responsibilities of State Programme Officer	Responsibilities of VBDCO/ DMO/PO at district level
MMDP implementation	Development and provision of guidelines on MMDP implementation. Enumeration of patients Minimum package of care and its delivery to the affected people. Geographical coverage. Strengthening of required facilities in health centres Prioritizing hydrocele surgeries and engagement of Medical Colleges	Develop a plan for implementation of MMDP component. Coordination of MMDP activities implementation in all endemic districts per guidelines. Providing guidance to districts in improving health centre facilities and designation of hospitals for hydrocele surgeries Periodically review and track the MMDP activities at the district level.	Implementation of MMDP activities at the block level. Designation of hospitals in the districts for hydrocele surgeries. Periodically review and track the MMDP activities at the block level
Confirmatory mapping	Review of reports of LF prevalence in hitherto non-endemic districts and advising states on confirmatory mapping.	Review of reports of LF prevalence in hitherto non-endemic districts, preliminary investigation in suspected endemic areas and reporting the outcomes to the national programme.	Implementation of confirmatory mapping surveys.
Monitoring and evaluation activities	Development of monitoring and evaluation framework and guidelines. Coordination of monitoring and evaluation activities. Provide technical support to states. Implement periodic independent evaluation of national programme Organise Joint Monitoring Missions for strengthening the programme.	Build technical capacity to implement the M & E in the state. Develop monitoring plan. Coordination of M & E activities in the state. Provide technical support to districts. Provide support to during the independent evaluation.	Timely implementation of of M & E activities in the district. Develop monitoring plan. Submit the M & E reports to the state office within the timelines. Undertake follow-up action whenever necessary (Ex.: TAS failure) Provide support if independent evaluation takes place in the district.
Data management	Establishment of a robust national programme database that includes all essential data on mapping, MDA, MMDP, NBS, TAS and monitoring and evaluation.	Establishment of a robust state programme database that includes all essential data on mapping, MDA, MMDP, NBS and TAS and monitoring and evaluation. Share date with the national programme office regularly.	Establishment of a robust district programme database that includes all essential data on mapping, MDA, MMDP, NBS and TAS and monitoring evaluation. Share date with the state programme office regularly.

Programme activities	Responsibilities of National Programme Manager	Responsibilities of State Programme Officer	Responsibilities of VBDCO/ DMO/PO at district level
Budget, allocation, utilization of funds and financial statements	Formulating budget proposal and mobilizing necessary funding for the programme from Central government Providing guidelines on fund utilization Apportioning of funds for various programme activities Allocation of funds to different states and union territories Obtaining all expenditure statements from states and preparation of expenditure report and submission of UCs	Mobilizing necessary funding for the programme from State government Apportioning of funds to various programme activities per central programme guidelines Utilization of funds for various activities as per approved budgets Allocation of funds to different districts Obtaining all bills and vouchers and expenditure statements from districts and preparation of expenditure report	Apportioning of funds to various programme activities per central and state programme guidelines Utilization of funds for various activities per central and state programme guidelines Allocation of funds to different PHCs Obtaining all bills and vouchers and expenditure statements from PHCs and preparation of expenditure report
Operational Research	Networking and collaboration with national and international research institutions, promoting and undertaking research to resolve operational issues of the programme Promoting and incorporating new diagnostic tools and intervention strategies into national programmes	Implementation of research agenda and projects in collaboration with research and academic organizations within the state Piloting, adopting and implementing new diagnostic tools and intervention strategies into the programme	Supporting and participating in research projects and investigations Operationalization and implementation of new diagnostic tools and intervention strategies
Partnership and collaboration	Engage with national and international stakeholders such as World Health Organizations, National NGOs, public and private sector, medical colleges, and allied bodies like IMA to achieve LF elimination	Partnership and collaboration with state level academic institutions, research organizations, medical colleges and hospitals and NGOs to achieve LF elimination	Partnership with local academic institutions, medical colleges and hospitals and NGOs to achieve LF elimination.
Preparation of LF elimination validation dossier	Preparation of the national Pre-LF elimination validation dossier and updating it time to time, through inputs of state programmes Preparation of the final national LF elimination validation dossier in standard format and submitting the same to WHO Taking all necessary steps to attain the LF elimination validation acknowledgment from WHO	Preparation of the state Pre-LF elimination validation dossier and updating it time to time Providing all the necessary data and inputs to the central programme to facilitate preparation of the final LF elimination validation dossier. Submission of data records with the visiting expert team, as part of LF elimination validation process	Providing all the programme data in standard formats to the SPO time to time Keeping all the data records to provide the same to the visiting expert team, as part of LF elimination validation process

Programme activities	Responsibilities of National Programme Manager	Responsibilities of State Programme Officer	Responsibilities of VBDCO/ DMO/PO at district level
Post-validation surveillance activities	Developing the strategy and guidelines on post-validation surveillance Providing the guidance to the state programmes to implement the post-validation surveillance activities	Providing inputs for the development of strategy and guidelines on post-validation surveillance Adapt, plan and implement the post-validation surveillance strategy in all endemic districts	Implement the post-validation surveillance strategy in the district/block

12.2 Roles and responsibilities of PHC/UHC Medical Officer and Municipal Health officer

Leadership and planning	MDA preparation	MDA implementation	MMDP implementation
Lead and coordination of implementation of all programme activities in PHC area/ Municipal wards. Development of a robust PHC micro-plan, together with PHC staff, for effective implementation of MDA and MMDP activities Motivation of staff to treat all eligible individuals and accomplish highest treatment coverage of >90% amongst the eligible population. Guiding the staff to develop micro-plans for each village/municipal ward for effective implementation of MDA, with focus on allotment of households to drug administration teams, repeated visits of teams to households, directly observed consumption, accomplishing the treatment coverage targets, and dealing with non-compliance and adverse events.	Lead and coordination of enumeration of households and population, using MDA registers, for each village/ municipal ward and arriving at target population figures. Calculation of drugs required for individual villages/urban wards and prepare a list and submit the same to District Programme Office. Keeping all IEC material, all data forms and MDA information sheets in place early, distributing the same to target villages/municipal wards in time and ensuring timely display/distribution for the MDA programme Conducting meeting of panchayat leaders of villages/ municipal councillors, presenting them the objectives and goals of the MDA programme and enlisting their support. Preparing lists of village-wise number of teams and drug administrators required to implement MDA and guiding the PHC staff in and ensuring their recruitment in each village/municipal ward, per guidelines.	Leading and coordinating implementation of MDA in all PHC villages/municipal wards through mobile communication with supervisory staff and drug administrator teams and undertaking field visits. Day to day monitoring of village-wise treatment coverage and ensuring high treatment coverage in all villages/municipal wards, with additional support wherever required. Leading and coordinating management of adverse events, providing on-site support to villages affected by more adverse events or severe adverse events. Receiving all completed MDA data forms from all villages/municipal wards, preparation of consolidated report for PHC and discussing the outcome of MDA with PHC staff. Submitting the MDA data and consolidated report to the DPO, based on feedback received from supervisory staff and drug administrators.	Ensure MMDP activities implementation/ services at PHC and SHC. Enumeration of lymphedema and hydrocele cases, through house-to-house survey, in all villages and municipal wards. Home based and PHC/ SHC based training of lymphedema patients on management of disease conditions. Providing at PHC/SHC necessary treatment to chronic disease patients, as and when required Contacting and counselling all the hydrocele patients to undergo surgical intervention. Integration of MMDP services with existing health facilities.

Leadership and planning	MDA preparation	MDA implementation	MMDP implementation
	Training of PHC staff members and other volunteers/drug administrators on MDA implementation and MMDP implementation, using the training material provided by the SPO and the services of LF experts and DVBDCO/ DMO. Transfer of funds to medical colleges for conduct of CES immediately after completion of MDA activity. Identification of low consumption areas based on previous MDA. Identification, training, planning and handholding the MSG approved support.	Receiving the funds allocated to PHC/Municipality from DPO and managing the funds to implement the MDA and MMDP programmes. Prompt disbursal of incentives, through PHC staff, to drug administrators who participated in MDA programme. Evening debriefing during MDA.	

12.3 Roles and responsibilities of supervisory staff, Drug Administrators and Health Workers

Supervisory staff	Drug Administrators (MDA)	Drug Administrators/Health workers (MMDP)
Get familiarized with areas in the village/s to be covered by MDA teams under his/her supervision. Brief the community leaders, youth and women's groups in the villages/ municipal wards during drug administration activity and enlisting their support. Interact with and leading the teams under supervision in effective implementation of drug administration activities. Day to day monitoring of village and team-wise treatment coverage accomplished, ensuring repeated visits of teams to all households to treat all eligible household members. Close supervision of monitoring of adverse events, providing necessary support to DA teams to deal with adverse events. Visit the non-compliance households, with the help of influential community members, and convince them to participate in treatment. Supervision of and supporting the teams in correct data recording and consolidation of village- wise treatment coverage data and preparation of MDA report Provide feedback to the PHC medical officer on the best practices of MDA and problems encountered in implementation of MDA in his/her area. Undertake refusal conversion during the monitoring.	Get familiarized with areas and households in the village or municipal ward to be covered by MDA by his/her team. Have a clear idea of his/her team's total number of target households, their location and target population. Collect and have identification card, adequate quantity of drugs, information sheet, data forms etc. and other supporting materials required for drug administration. Effective administration of drugs to members of target households and work as per micorplans. Clarify the doubts of community members on drugs and MDA, if necessary, by involving supervisory staff. Revisit houses where household members were absent at the time of drug administration or houses were locked. Make additional visits to non-compliance households and convince the members to adhere to DOC and seek support from the identified local influencers. Recording the MDA data in standard data sheets accurately. Closely monitor the incidence of adverse events and provide supportive treatment to the affected, whenever necessary and inform MoIC as necessary. Return the remaining drugs to the supervisory staff, with a note on quantum of drugs remaining. Check the data forms and returning the completed data forms to supervisory staff or PHCs.	House to house enumeration of chronic LF disease patients Contact the lymphedema patients and train them on lymphedema management measures at home or PHC, per the timeline and work plan developed by the PHC. Contact the hydrocele patients and counsel the patient to undergo surgical intervention and explain the benefits. Record the data on training of lymphedema patients in standard format. Keep and update the list of hydrocele patients counselled and patients underwent surgical intervention in standard format.

Annexures: 1

DETAILS OF TASK FORCE/COORDINATION COMMITTEE MEETINGS

Name of the Meeting	Chaired by	Key Participants	Terms of Reference	Timelines
National Technical Expert Committee (NTEC) is constituted by the MOH & FW to advise the programme on technical aspects, formulation of policies, &recommendations.	Director General of Health Services, MOH&FW	Technical Experts (7-9 experts), Director-NCVBDC. Representatives/ Technical Experts from WHO, ICMR, NCDC, Medical college professors, State Programme Officers of LF (2-3), Member Secretary (National Programme Manager, NCVBDC)	To Review and update national policies for lymphatic filariasis elimination, Review and update the national objectives and the elimination strategy Review the status of LF elimination situation in the country, suggest changes in the programme based on situation analysis and programme review, research, intersectoral convergence, to provide technical inputs and guidance from time to time to achieve elimination of LF from the country.	The committee will meet yearly twice or whenever required to address any issue.
State Task Force (STF) to perceive importance of NTD like LF/VL/Leprosy & direct concerning dept to issue instructions to all districts for extending cooperation.	Minister of Health & Family Welfare of the State	Chief Secretary (Vice Chair), 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),Mission Director(NHM), Director General of Health Services (State)/ Director of Health Services and State Programme Officer(Member Secretary), WHO and partners	Review the progress of implementation and performance, 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. To list the areas on which other dept should collaborate & issue instructions	1st STF meeting is to be held 90 days before MDA,2nd STF meeting one month before MDA and 3RD meeting 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 MoHFW (GOI), Directorate General of Health Services (GOI) and Directorate of NCVBDC within 15 days of holding the meeting. The Action Taken Report is to be submitted to Member-Secretary by the concerned departments within a fortnight after receipt of STF recommendations

Name of the Meeting	Chaired by	Key Participants	Terms of Reference	Timelines
State Technical Advisory Committee (STAC)	Director General of Health Services (State) /Director of Health Services (State)	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), Nodal state programme manager under NHM, Health Officer of Railways/ ESI/ Municipal Hospital / Centre/ IMA representative and State Programme Officer of Malaria & Filaria or VBD (Member Secretary), WHO & partners	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 recommendations made in each STAC meeting will be communicated to all the members with a copy endorsed to Directorate of NCVBDC within 10 days of holding the meeting. The Action Taken Report is to be submitted to Member-Secretary by the concerned departments within a fortnight after receipt of STAC recommendations.
District Co-ordination Committee (DCC)	District Magistrate/ District Collector	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 WHO and partners 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, Women & Child Development, Zila Parishad, Rotary & Lion Club, Red Cross 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.	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 Deworming Day for conducting MDA throughout the endemic districts/PHCs and the preparatory work should be discussed in the first DCC meeting; The 2nd meeting of District level Coordination Committee should be conducted 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.	First DCC meeting at least 90 days prior to the actual date of MDA; 2nd DCC meeting should be conducted 15 days in advance of the day of drug administration. Post-MDA meeting should focus on and review the progress of MMDP strategy also.

Name of the Meeting	Chaired by	Key Participants	Terms of Reference	Timelines
District/Urban Task Force	CMO/ACMO NUHM or VBD officer	A special urban task force should be formed under the chairmanship of the District Management. The main members of the task force should include Deputy CMO/ACMO NUHM, Municipal Commissioner, Superintendent of the Sadar/District hospital, Municipal Health Officer, Deputy CMO in-charge NUHM, District VBD/malaria officer, District Program officer – Woman and child department, District Education Officer, Representatives from WHO & partners , rotary, NGOs, religious organizations, IMA and IAP, medical /nursing college nodal person, District IEC Officer, Public Health Engineering, Representatives from other relevant bodies	The main duty of the task force would be to formulate a coherent MDA campaign plan through inter-departmental and inter-sectoral coordination in concurrence with the state task force meeting. The urban task force should also review the preparation of MDA, implementation and review the MDA progress after completing the campaign and help in taking important decisions, for mid-course correction.	1st Meeting before conducting MDA and 2nd meeting during MDA and 3rd after completion of campaign
Block Coordination Committee	Sub-Divisional Magistrate	Block Coordination Committee to be formed under Sub-Divisional Magistrate. Block Medical Officer / Nodal Medical Officer for Filaria at Block as Member Secretary with other representatives from public-private and partner NGOs as members. The block programme manager of NRHM must be included as member of BCC. Members from other department such as education, youth affairs, social welfare, rural development, Panchayat, Municipal Corporation, information and broadcasting, Women & Child Development, Zila Parishad, Rotary & Lion Club, Red Cross etc. in the BCC.	Implement the Block MDA campaign and take appropriate measures as per the concurrence of District Coordination Committee to improve the consumption of MDA drugs. 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 Pre- MDA preparatory work should be discussed in the first BCC meeting; The 2nd meeting of Block level Coordination Committee should be conducted to review the Block Action Plan (Manpower Assessment / Logistics- mobility / supervision, etc.) and preparedness for launching the MDA and take appropriate measures to plug the loopholes, if any.	The 1st BCC meeting 30 days prior to the actual date of MDA; 2nd BCC meeting should be conducted 7 days in advance of the day of drug administration.

Name of the Meeting	Chaired by	Key Participants	Terms of Reference	Timelines
Block Task Force	Block Medical Officer	The members Include the Block Program officer of various departments- Woman and Child Development, Education, Panchayati Raj, Social Welfare, Rural Development and Youth Affairs. Other members include from key Partner Organizations, Rotary, NGOs, Religious Organizations, NYK, NSS and NCC etc.)	Ensure inter-departmental and inter-sectoral coordination in concurrence with the District/ Urban task force meeting. The block task force should also review the preparation of MDA, implementation and review the MDA progress after completing the campaign and help in taking important decisions, for mid-course correction.	1st Meeting before conducting MDA and 2nd meeting during MDA and 3rd after completion of campaign.

Annexures: 2

FAMILY REGISTER

Family Register – for enumeration (to be filled at Village level)												
Name of Village/Urban area:							**Date of Family Enumeration:**					
Name of Drug Administrator:												
Household no	**Sl.No.**	**Name of head of household**	**Name of Individual**	**Age (in yrs)**	**Gender (M/F/O)**	**Number of DEC tablets consumed by beneficiary**	**Number of ALB tablets consumed by beneficiary**	**Number of IVR tablets consumed by beneficiary**	**Reasons for not consuming all or any drug#**	**Date of Drug Consumption (dd/mm/yyyy)**	**Any Adverse events reported (Write the code)$**	**Whether person has may be indicative of Lymphedema or hydrocele (Y/N)****

Note:

(1) Administer tablet Ivermectin to children 6 year and above

(2) Children in the age group 2-5 years are to be administered DEC and Albendazole only

(3) Do not administer MDA drugs to children < 2 years, Pregnant Women, and seriously sick beneficiaries

P- Pregnant,Y= Young, S=Sick, A=Absent, R=Refused, L=Locked, CB: Consumed at Booth O= Other [Specify]

$ 1-Fever/ 2- Headache /3- Dizziness/4-Vomitting / 5- Nausea /6- Abdominal Pain / 7- General Weakness / 8- Skin Rash / 9 -Others (specify)

**- Wherever a Y is recorded, the details of the person has to be also captured in the line listing format

Line listing of persons suspected to be affected by Lymphoedema or Hydrocele (Summary) – Family Register

S.No	**Name of individual**	**Age**	**Gender (Male/ Female/ Other)**	**Part of body affected by Lymphedema Disease Affected Part (Put a tick under relevant part)**							**Mobile number**	**Duration in yrs of person's living in the area**
				Rt Leg	**Lt Leg**	**Rt Hand**	**LT Hand**	**Scrotum**	**Breastt**	**Other**		

Annexures: 3

MICRO PLANS

Micro planning format for Village/urban area						
State		**District**		**Block:**	**Urban area/ Village**	
Name of the area:		Team No.				
Drug Administr tor Name 1:		Mobile no.		**Designation: ASHA/ AWW/ Volunteer/ Other_____**		
Drug Administrator Name 2:		Mobile no.		**Designation: ASHA/ AWW/ Volunteer/ Other_____**		
Supervisor name:		Mobile no.		**Designation:**	**a**	
CHC/ PHC/ Urban Unit:		Sub Center:		**Village/ Ward/ Mohalla name:**		**RRT No.**
Include dates for each day	**Day 1**	**Day 2**	**Day 3**	**Day 4**	**Day 5**	
Tola/ Hamlet/ Mohalla/ Village						
Head of the family member name and address of he first house						
Head of the family member name and address of the last house						
Total no of HHs from first to last house						
Name and contact no. of the local influencer						
	Day 6	**Day 7**	**Day 8**	**Day 9**	**Day 10**	
Tola/ Hamlet/ Mohalla/ Village						
Head of the family member name and address of he first house						
Head of the family member name and address of he last house						
Total no of hhs from first to last house						
Name and contact no. of the local influencer						
Details and coverage date of schools/ brick kilns/ Construction sites/ migratory population (nomads):						

Booth Level Microplanning

District Name:	Block Name:	Supervisor Name:	Designation:

Details about Booth
(Booth Includes – Hospitals, Market Areas, Congregation Sites, medical college OPDs, Bus Stand, Railway Station, Airports, Bus Stands, RWAs, Factories)

Day & Date of Activity	Booth Number	Booth Location	Name of DA	Name & Contact Details of Local Influencers
			DA 1 -	
			DA 2 -	
			DA 1 -	
			DA 2 -	
			DA 1 -	
			DA 2 -	
			DA 1 -	
			DA 2 -	
			DA 1 -	
			DA 2 -	
			DA 1 -	
			DA 2 -	
			DA 1 -	
			DA 2 -	
			DA 1 -	
			DA 2 -	

Annexures: 4

NIGHT BLOOD SURVEY MONITORING AND POST NBS ACTIVITY MONITORING CHECK LIST

4 a) NBS Monitoring Format				
State		District		
Site Name		Site Type		
Date of start of activity		Date of IEC as per plan		
Date of monitoring		Name of the person monitored the activity and designation:		
			Remarks	
1.	Time at which Team has arrived at Spot ……		Time	
2.	Site same as per micro plan		Yes/No	
3.	Any Logistic issue please encircle - Old greasy slide/Poor stain quality/Poor Quality Lancet/Others (Please specify)			
4.	Composition of team as per micro plan. Name and Designation of absentee/s……		Yes/No	
5.	Village level meeting or Prior communication about night Blood survey has been done in that area. (date of communication……)		Yes/No	
6.	Is the sample of 300 people per site for the night blood survey (NBS) chosen through random sampling?		Yes/No	
7.	At what time the blood samples were collected		Time	
8.	Serial number on Blood slide matches with the register.		Yes/No	
9.	Blood slide collected with adequate amount of blood. (4 to 5 Drops/slide)		Yes/No	
10.	Quality of blood slide: Smear size 20 mm*30 mm, uniformly spread, in centre of slide		Yes/No	
11.	Blood slides are dried before packing.		Yes/No	
12.	Number of Blood slides prepared by team till the time of visit ……			

4 b) Checklist for Post NBS Activity Monitoring (All lab-facilities should be visited within 24 hrs after completion of the activity)			
Name of Block/ Municipality			Remarks
Name of RH/ BPHC/ UPHC			
Name of the monitoring person and designation:			
1.	ALL SLIDES (at least 600 in Post MDA NBS/ 900 in Pre- TAS) are available in the Lab of the Block/Municipality health facility	Yes/No	
2.	Are all slides kept in proper manner inside the Slide- Boxes	Yes/No	
Please check the slides (5% from each box) and monitor the following points			
3.	Are All slide labeled properly as per the instructions given by the district	Yes/No	
4.	Quality of the Thick smear is Satisfactory (Smear size 20 mm*30 mm, uniformly spread, in centre of slide)	Yes/No	% of Good Quality Sl
Please interview and check whether following logistics for staining and examination are available			
5.	Distilled Water (atleast 3 lt for Post MDA/ Atleast 4.5lt for Pre-TAS)	Yes/No	
6.	JSB1 Stain (atleast 1.8 lit for Post MDA/2.7lit for Pre- TAS)	Yes/No	
7.	Concentrated HCL (Atleast 20ml for Post-MDA/30ml for Pre-TAS)	Yes/No	
8.	Methanol (Atleast 1lit for Post MDA/1.5ml for Pre-TAS)	Yes/No	
9.	Properly Maintained Microscope: Microscope type: Monocular/Binocular, Low power Lens: 5X or 10X	Yes/No	
10.	Whether both 10X & 40X objective lens available (if No inform the District Nodal Person for immediate corrective measures)	Yes/No	
If the staining process is ongoing, try to observe the following points/ If it is completed before you reach try to assess whether the following steps were followed by interviewing the LT			
11.	Preparation of 2% Acid Alcohol Mixture was done Correctly	Yes/No	
12.	Any other observations (Please specify) Time duration between collection of smear and dehemoglobinization, whole smear stained, or partial smear stained, quality of staining and artefacts, use of 100X for species confirmation, method of cross-checking including selection of 10% negative slides and 100% positive slides		
13.	Number of Blood slides matching with line list of population screened.	Yes/No	

Annexures: 5

LINE LISTING OF MF/AG POSITIVE PATIENTS

Annexure: Line Listing of Mf /Ag Positive Patients

Name of the State

Name of the District

S.No	Name	Age (in years)	Gender	Phone number of Patient/ Guardian	Village Name	Name of the sub-Centre	Name of the Block/PHC/ CHC	Type of Survey (1=MF Survey, 2= Pre-TAS, 3=TAS, 4=Filaria Unit Survey)	Type of Methodology (1= NBS, 2=Only FTS,3=FTS followed by NBS)	Result* (1= Mf +ve,2=FTS +ve and Mf+ve, 3= FTS +ve and Mf-ve)	Date of Survey (DD-MM-YYYY)
* FTS +ve and Mf -ve case is treated but is not followed up											

Have you taken/ consumed the drugs during MDA? (0= Never, 1=Once, 2=Twice, >2=More than two)	If consumed, Year of last consumption of MDA(YYYY)	Whether Treatment provided after testing positive (Yes/ No)	If Yes, Date of Initiation of Treatment	Date of Completion of Treatment	Treatment Details (1=Single Dose DA, 2=Single Dose IDA,3=12 Day DEC,4=Others)	Follow Up Of +ve cases (Yes/No)	Date- 1st follow up(6 months after treatment completion)	Status(MF Positive/ MF Negative)	Date-2nd follow up (12 months after treatment completion)	Status(MF Positive/ MF Negative)	Whether the patient consumend MDA drugs in subsequent round (Yes/No)

Date- 3rd **follow up** (18 months after treatment completion)	**Status (MF Positive/MF Negative)**	Date-4th **follow up** (24 months after treatment completion)	**Status (MF Positive/MF Negative)**	**Whether the patient consumed MDA drugs in subsequent round (Yes/No)**

Annexures: 6

PATIENT CARD

Patient Card	Patient Information	*Clinical summary and remarks for follow up, ADL or any acute illness for that patient visited hospital*				How to do Morbidity Management (Pictorial messages in local language to be given - state specific)
		Remarks			*Date*	
Elimination of Lymphatic Filariasis (ELF)	Name of Head of Family					
फाइलेरिया मुक्ति अभियान सुरक्षित दवा, भरोसा स्वास्थ्य का	Phone number of Patient/Head of Family					
	Age					
	Sex					
	URN (Unique Registration Number) : - - / - - -/ - - - / - - / - - - / -					
	Date of Registration					
	Type of LF Case:* LL, RL, LA, RA, H, B, O (Please encircle the correct code)					
	Date of Hydrocelectomy					
Name of the Patient	Place of Hydrocelectomy DH/Medical College/CHC/Camp/Private)					
Village	Stage of Lymphedema at time of registration (Stage between 1-7 as per guideline) - *Patients may have symptoms of more than one stage. In such situation consider the higher stage (Circle as appropriate **Stage 1, Stage 2, Stage 3, Stage 4, Stage 5, Stage 6, stage 7**					
Sub Center	Date of initial MMDP Training for Lymphedema	FU date	FU date	FU Date	FU Date	
PHC	Date when MMDP Kit provided - Year - 1					
District	Date when MMDP Kit provided - Year - 2					
State	Date when MMDP Kit provided - Year - 3					
	Date when MMDP Kit provided - Year - 4					
	Date when MMDP Kit provided - Year - 5					
***Codes: LL- Left leg, RL- Right Leg, LA- Left Arm, RA-Right Arm, H-Hydrocele, B- Both (L&H), O- Others**						**Good hygiene to clean the affected areas. Elevating the affected areas. Care for wounds in the affected areas. Exercising based on a doctor's directions. Signature of MOIC of the Block**

Annexures: 6 (A and B)

A AND B LYMPHOEDEMA AND HYDROCELE

ELF Register – A. Lymphoedema (Page - 1)																	
Name of State				Name of District		Name of Block/Planning Unit/Urban PHC/Municipality											
URN (Unique Registration Number)	Date of Registration	Name of the Patient	Name of Head of Family	Phone number of Patient/ other family members	Complete address of Patient (Ward, Mohalla/ Subcenter, Village)	Age of Patient	Gender of the Patient (M/F/O)	Disease Affected Part						Other	Details of ASHA of patient's area		
								Leg		Arm		Breast			Name of ASHA/ Sahiya/ Health Staff	Phone number of ASHA / Sahiya/Health Staff	
								R	L	R	L	R	L				

ELF Register – A. Lymphoedema (Page – 2 continuation)																		
Stage of Lymphedema at time of registration*	Duration of LF Disease	Year - 1		Year - 2		Year - 3		Year - 4		Year - 5			Status 1. Continuing ; 2. Died 3. Undergone hydrocelectomy					Remarks
		Date of MMDP training	Date MMDP Kit provided	Date of MMDP training	Date MMDP Kit provided	Date of MMDP training	Date MMDP Kit provided	Date of MMDP training	Date MMDP Kit provided	Date of MMDP training	Date MMDP Kit provided	If patient presented with any acute attack, record the date of onset	Year 1	Year 2	Year 3	Year 4	Year 5	

***(Stage between 1-7 as per guideline) - Patients may have symptoms of more than one stage. In such situation consider the higher stage.**

LF Register – B. Hydrocele (Page - 1)									
Name of State				Name of District		Name of Block/{lanning Unit/ Urban PHC/Municipality:			
URN (Unique Registration Number)	Date of Registration	Name of the Patient	Name of Head of Family	Phone number of Patient/ Other Family Members	Complete address of Patient (Ward, Mohalla/Subcenter, village)	Age of Patient	Gender of Patient (M/F/O)	Details of ASHA of patient's area	
								Name of ASHA/ Sahiya/ Health Staff	Phone number of ASHA/ Sahiya/Health Staff

LF Register – B. Hydrocele (Page – 2 Continuation)						
Communication with the patient			Date of Hydroclectomy	Name of facility where Hydrocelectomy was done (DH/ CHC/Camp/Private/Medical college)	Outcome like complete recovery should be recorded on follow up of patients : complete recovery- 1; Recovery with sequele 2; Death 3; Migration 4;Others 5; *Camps/health facility; Camps A ; Health facility B	
Date of Contact	Willing for Surgery (Y/N)	If not contacted, Reason				

Annexures: 7

MDA PREPAREDNESS CHECKLIST – STATE/DISTRICT/BLOCK OR IU

Format for monitoring of preparedness at State on Mass Drug Administration (MDA)

Date:_____State: _____ Name(s) of the member of team:_____

Name & designation of the officer interviewed:_____

Sl No	Activities	Status	Remarks
1.	No of Endemic districts/blocks proposed for current round of MDA		
2.	Has Implementation units selected for MDA?	Yes	
3.	Whether State task force meetings for MDA held/planned? Under the chairmanship of PS/MD	Yes / No	
4.	Whether State coordination meeting for MDA held/planned?	Yes / No	
5.	Whether funds released from state to districts?	Yes / No	
6.	Whether letters issued from MD/ PS-health to District Collectors/DM for MDA?	Yes / No	
7.	Whether inter departmental letters for IDA/MDA issued from state?	Yes / No	
8.	Status of state level media sensitization workshop	Planned / Completed / Not planned	
9.	Whether State ToT for district level /nodal officers held/planned?	Yes / No	No of expected ____, No
10.	Whether SoP/technical guidance disseminated to districts?	Yes / No	
11.	Is the state action plan ready?	Yes / No	
12.	Is state social mobilization plan ready?	Yes / No	
13.	Is there a plan in place for supervision by State officials?	Yes / No	
14.	Are night blood survey (microfilaria survey) reports available from all MDA blocks?	Yes / No	
15.	Are adequate drugs (Ivermectin/ DEC/ Albendazole) received at State (Including balance stocks of the past records)	Yes / No	
16.	Whether indent placed/instruction issued to districts for procurement of logistics like Indelible marker pen, chalk/geru and dose pole/measuring tape for IDA?	Yes / No	
17.	Whether indent placed/instruction issued to districts for printing of Posters/Banners/Registers/ Formats?		
18.	Status of the MSG approved positions?		
19.	How many Medical colleges are engaged for MDA campaign		

Any other points discussed:

Format for monitoring of preparedness at District on Mass Drug Administration (MDA)

Date: _____ State: _____ District: _____ Date of assessment:_____

Name of member of team :_____ Name of the officer interviewed: _____

Designation: _____

Sl No	Activities	Status	Remarks
1.	Whether and when was the drugs requirement submitted to State programme office?	Yes / No	
2.	Whether district task force meetings for IDA/MDA planned/held?	Yes / No	
3.	Whether District Task Force meeting chaired by District Magistrate/Collector?	Yes / No	
4.	Whether district coordination meeting planned /held?	Yes / No	
5.	Were adequate funds received from the state? Mention the date when funds were received	Yes / No	
6.	If yes, whether funds released from districts to blocks? Mention the date when funds were transferred	Yes / No / NA	
7.	Whether letters have been issued from DC/DM to BDO/PRI/ICDS/Education?	Yes / No	
8.	Whether district level ToT for block /nodal officers held/planned?	Yes / No	No expected ___, No trained ____
9.	Whether district prepared block wise DA training calendar?	Yes/No	
10.	Whether training AV aid available with the district VBD officer (DA and IDA videos for drug administrators)	Yes / No	
11.	Whether SoP/technical guidance disseminated to blocks?	Yes / No	
12.	Whether the district is updating the information/data in Pre MDA preparedness tracker sheet	Yes / No / Not available	
13.	Status of district level media sensitization workshop	Planned / Completed / Not planned	
14.	Whether monitoring plan of Pre-IDA/MDA activities available at districts?	Yes / No	
15.	Is Night blood survey (microfilaria survey) in all blocks completed as per criteria?	Yes / No	
16.	Whether the list of high priority blocks/villages/urban areas available	Yes / No	
17.	Whether night blood survey data shared with state?	Yes / No	
18.	Are micro plans from all planning units (blocks/urban) received at district level? Days for Booths and H2H	Yes / No	
19.	Are Medical colleges engaged in MDA	Yes/No	
20.	If yes, whether all micro plans reviewed at district level?	Yes / No / NA	
21.	Is there a plan in place for supervision by district officials?	Yes / No	
22.	Is district social mobilization/IEC plans ready?	Yes / No	
23.	Is rapid response team made at district level?	Yes / No	
24.	Are adequate drugs (Ivermectin / DEC /Albendazole) received at district?	Yes / No	
25.	Whether indent placed/instruction issued to blocks for procurement of logistics like Indelible marker pen, chalk/geru and dose pole/ measuring tape for IDA?	Yes / No	
26.	Whether indent placed/instruction issued to blocks for printing of Posters/Banners/Registers/Formats?	Yes / No	
27.	Any other observations and remarks		

Format for monitoring of preparedness at Planning unit (Block/Urban) on Mass Drug Administration (MDA)

State: _____ District: _____ Block_____Planning unit: _____ Assessment date: _____

Name of the member of team : _____ Name & Designation of the officer interviewed: _____

Sl No	Activities	Status	Remarks
1.	Whether dugs requirement submitted to District office?	Yes / No	
2.	Whether block/ urban task force meetings for MDA planned/held?	Yes / No	
3.	Whether block/ urban coordination meeting planned /held?	Yes / No	
4.	Were funds received at CHC/ PHC?	Yes / No	
5.	Whether incentive of last round distributed to team members?	Yes / No	
6.	Is micro plan available at the block CHC?	Yes / No	
7.	Whether social mobilization/IEC plans available?	Yes / No	
8.	Whether supervision plan for Pre-MDA activities available?	Yes / No	
9.	Whether training of block level officers/ nodal officers completed?	Yes / No	No of expected ____, No trained_____
10.	Whether training of drug administrators completed?	Yes / No	No of DA____, # trained_____#batches……
11.	Are training AV aids available (DA/IDA/ Social mobilisation)	Yes / No	
12.	Whether sensitization of the BDO, PRI, School teachers, CDPO, Community leaders, etc. completed?	Yes / No	
13.	Whether distribution plan for logistics and drugs available?	Yes / No	
14.	Is there a plan in place for supervision by block officials during MDA?	Yes / No	
15.	Has training of supervisors completed before the round?	Yes / No	No of Supervisor__, No trained__
16.	Are all villages /wards /mohalla included in micro plan?	Yes / No	
17.	Is IEC materials (banners / posters etc.) displayed at CHC/ PHC?	Yes / No	
18.	Are adequate drugs (Ivermectin / DEC/ Albendazole) received at block?	Yes / No	
19.	Whether logistics like Indelible marker pen/ chalk/ geru / dose pole/ measuring tape for MDA/ IDA etc are available at block?	Yes / No	
20.	Is the Family Register for MDA being distributed to Drug Administrator? *one per team*	Yes / No	
21.	Is the line listing of LF patients HSC wise completed before the MDA round?	Yes / No	
22.	Total number of LF cases in the block | Hydrocele - | Lymphedema (any limb) -	Lymphedema (Others) -	

Any other observations:

Annexures: 8

CONCURRENT MONITORING AT IMPLEMENTATION UNIT LEVEL

Format for concurrent monitoring of Mass Drug Administration (MDA)

Date: _____District:_____Block:_____Village/ Urban area: _____No. of houses in the village/Urban area:_____ Setting: Urban / Rural

Name of Drug Administrators and designation: DA1_____Designation: _____DA2_____Designation_____

Supervisor's name: _____Designation_____

Name of monitor (Block letters only): _____ Designation: _____Organization: Others

Time of visit by monitor: _____ Number of tolas / hamlets/ settlements in this village: _____Number of tolas / hamlets/ settlements monitored: _____

Note: Monitors should try to meet the Team working in the area and observe their activities; Also visit at least 3 houses of current day (if possible, visit along with team)

Sl No	Particulars	Findings			Remarks
1.	Has the team visited the area?	Yes / No			
2.	If the team hasn't visited the area, Reason (1-Team has not turned up, 2-Last moment micro plan changed, 3-Team not aware, 4-	1 / 2 / 3 / 4			
3.	Assessment of M houses by monitor – House number/date of visit by team				
4.	Whether team found to be distributing or ensuring consumption of drugs? (D- Distribution, C- Consumption, B- Both)	D / C / B	D / C / B	D / C / B	
5.	Whether finger marking found?	Yes / No / NA	Yes / No / NA	Yes / No / NA	
6.	Whether house marking found?	Yes / No	Yes / No	Yes / No	
7.	Availability of logistics (please encircle available items)	Indelible marker / Chalk / Family register /Dose pole / Measuring Tape/ None			
8.	Whether daily workplan/micro plan for DA available with team?	Yes / No			
9.	Drug Administrators (DA) working as per daily workplan/micro plan?	Yes / No			
10.	How many DAs were trained before this round? Please encircle	DA1 / DA2 / Both / None			
11.	Are adequate drugs (Ivermectin/ DEC/ Albendazole) available	IVR - Yes / No/ NA, DEC – Yes/No, ALB – Yes/No			
12.	No. of person administered drug by DA at time of visit. *				
13.	No of person refused to consume drug due to any reason at time of visit *				
14.	What IEC/IPC method is used in the area?	ANM / ASHA / MPW / AWW / Vol /Radio / TV / Newspaper / Hand bills / Others / None			
15.	Line list of LF cases has been updated before the MDA round?	Yes / No / Being updated			
16.	Whether family register updated simultaneously?	Yes / No			
17.	Are the Team members aware about correct dose for IDA/ MDA? *(refer dosage schedule to know the correct dose)*	Yes / No / Partial			

Annexures: 9

REPORTING FORMATS

Annexure 9.1 Table-1: Update on Lymphatic Filariasis programme Status : Year 20….

(To be compiled and sent by District program officer to respective state and state to share with NCVBDC, Delhi once annually)

Name of the state ***Name of the district:*** ***Total Population of District***

Total number of Blocks	
Total number endemic blocks	
Total number of non-endemic blocks	
Total number of unsurveyed blocks	

Status of the Endemic District under LF programme									
					Stage of program				
S.No.	Name of endemic blocks	Population	Total number of EUs	Name of the EUs*	MDA (DA/IDA, Month/ Year of last round of MDA)	Pre TAS (Month/ Year)	TAS1 (Month/Year)	TAS 2 (Month/Year)	TAS 3 (Month/Year)
	Block 1								
	Block 2								
	..								
	..								
	..								
	..								
	Block n								
	Total=								

*Given that an EU needs to be formed at a maximum popn. of 5 lakh, if an EU is being formed by combining 2 or more blocks then kindly indicate it accordingly in the table

Annexure 9.2 Table-2 A: Block level Mf survey: Year 20….

Name of the state:_____ Name of District:_____ Name of Block: ___

Date of survey : From (dd/mm/yyyy):_____ To (dd/mm/yyyy):_____(Till Slide collection or Slide Examination)

Type of site (a)	Name of the Block/ IU	Name of the PHC (NHM code) (b)	Name of the SC/ Urban ward (NHM code) (c)	Name of the site Village/ urban area (d)	No of persons examined by NBS (e)	No +ve for Mf (f)	Mf rate (%) (g)= f/e*100
Sentinel							
Random							

Pre TAS for DA and IDA

Table-2 B: Block level Pre TAS for DA/ IDA block: Year 20….

Name of the State: _____ Name of District: _____ Name of Block: _____

Period of slide collection: From (dd/mm/yyyy): _____ To (dd/mm/yyyy): _____

Period of slide examination: From (dd/mm/yyyy): _____ To (dd/mm/yyyy): _____

Pre -TAS for DA blocks

Type of site (a)	Name of the Block/ IU	Name of the PHC (NHM code) (b)	Name of the SC/ Urban ward (NHM code) (c)	Name of the site Village/ urban area (d)	No slides tested by NBS (e)	No +ve for mf (>1%) (f)	Mf rate (%) (g)= f/e*100
Site 1 (High risk)							
Site 2 (High risk)							
Site 3 (Random)							

Pre-TAS for IDA blocks

Type of site (a)	Name of the PHC (NHM Code) (b)	Name of the SC/ Urban Ward (NHM code) (c)	Name of the site Village/ urban area (d)	Test with FTS			No tested by NBS (All FTS +ve to be confirmed by NBS) (h)	No +ve for mf (>1%) (i)	mf rate (%) j= (i / (e-g)*100))
				Total persons examined with FTS (e)	No. +ve persons with FTS (Ag>2%) (f)	No. of invalid test (FTS) (g)			
Site 1 (High risk)									
Site 2 (High risk)									
Site 3 (Random)									

Annexure 9.3 : Table-3: Mass Drug Administration (MDA) Coverage in the district: Year 20….

Date (s) of MDA From _____ To:_____ (dd/mm/yy) till end day of Mop up round

Name of the Block	Gender		No. of people administered MDA drug					% administered drugs (Of Total Popn) (b/a*100)
		Total Population(a)	>=2 to <5 years	>=5 to <15 years	15-19 years	>19 years	Total (b)	
Block 1	Male							
	Female							
	Other							
	Total							
Block 2	Male							
	Female							
	Other							
	Total							
..	Male							
	Female							
	Other							
..	Total							
Block n	Male							
	Female							
	Other							
Total								

Annexure 9.4 : Table-4: HR details for the LF programme (Annual Table)

Administrative level	Designation / category	*No. of staff sanctioned/ Identified	>=2 No of staff in position to <5 years	No. of staff trained for MMDPservices	
				Lymphedema care	Hydrocelectomies
State Level	1				
	2				
	3				
	Total				
District Level					
	Total				
Block/ CHC Level					
	Total				
PHC Level					
	Total				
Subcentre Level					
	Total				
Grand Total					
	Total				

* 'No. of staff sanctioned' (in the third colum) should reflect the staff of Health and other sectors required to be trained for ELF.

Annexure 9.5 : Table-5: Health infrastructure available during Year 20…. (Annual Table)

Category of health care	Type of health facility	Total no. of health facilities	No of health facilities providing minimum package of care
District Level	Medical college/ hospital		
	District hospital		
	Others		
Block level			
Block1 name	Sub district hospital		
	CHC Level		
	PHC Level		
	Subcentre Level		
Block2 name	Sub district hospital		
	CHC Level		
	PHC Level		
	Subcentre Level		
Block…name	Sub district hospital		
	CHC Level		
	PHC Level		
	Subcentre Level		

Annexure 9.6.: Table-6: Training of Health Staff for ELF during Year 20….

(To be submitted post MDA round)									
District _____					**State_____**				
Date of ToT (dd/mm/yyyy):						**No. of persons trained:**			
Block Name	**Total DAs identified**	**Total DAs trained**	**No. of training batches**	**Period of Trainings**		**Total supervisors identified***	**Total no of supervisors trained**	**No. of Mos trained in MDA**	**No. of RRT members trained in MDA**
				From date (DD/MM/YY)	**To date (DD/MM/YY)**				
*Supervisors selected includes ANM, LHV, ASHA Sanginis etc									

Annexure 9.7 : Table-7: IEC/BCC Campaign for MDA:

(To be submitted post MDA round) **Name of the District**

Unit of reporting (Circle applicable one): Block…..1 **Planning unit…...2** **Urban PHC…..3**

Name of concernedBlock(s):_____

IEC/BCC activities	Number required (As per standard calculations based on NCVBDC norms)	Number Received/ printed/ activities conducted	Number distributed
Banners			
Hoarding			
Handbills			
Brochures			
Posters			
Identification Cards			
Date convergence meeting with Key departments (civil supply, education, SRLM, PRI)			
Convergence Meetings at Block level with allied departments. Please mention			
Issuance of directives to support MDA social mobilization from key departments			
Print media activities conducted:			
i) Date of Media Briefing			
(ii) Print media (newspaper articles)			
Electronic media activities conducted (TV, Radio, video bytes, cable)			
Social Media posts including whatsapp messages			
Mid media(Drum beating, miking, skits/ nukkad natak)			
Social Mobilization Activiites conducted by:			
Schools			
PRI			
SHGs			
No. of rallies/ meetings organized			
Any Others social mobilization activities conducted (Specify)			

Annexure 9.8 : Table-8: Post Consumption Events (Adverse Events):

Year 20….

Name of the District:

		Type of Reactions*						No. of persons with Serious Adverse Reactions			Remarks
Name of block	No. of persons with Adverse Drug Reactions	1	2	3	4	5	6	Total of Adverse Reactions	Requiring any Hospitalization	Reason for hospitilisation	
* Adverse events reported: 1-Fever; 2- Bodyache; 3- Vomiting/ Nausea; 4-Headache, 5-Attack of ADL; 6- Others (specify)											

Annexure 9.9 : Table-9: Stock status of Drugs (to be filled after completion of MDA round in the district)

Name of the District/ Urban Health Centre/ Municipality

Block name	DEC (100 mg)					DEC Tablets expiring within next 1 year		*Albendazole (400 mg)*							Albendazole tablets expiring within 1 year		*Ivermectin (3 mg) (only if IDA)*					Ivermectin tablets expiring within 1 year	
	Opening balance before start of MDA (a)	No. of drugs received for current round (b)	No. of drugs used during MDA round (c)	No. of drugs damaged during MDA round (d)	Total balance remaining after MDA round = a + b –(c+d+e) (opening balance for the next round)	Date of Expiry	No of tablets expiring	Opening balance before start of MDA (a)	No. of drugs received for current round (b)	No. of drugs used during MDA round (c)	No. of drugs damaged during MDA round (d)	No. of drugs used in regular OPD etc (e)	Total balance remaining after MDA round = a + b –(c+d+e) (opening balance for the next round)	Date of Expiry	No of tablets expiring	Opening balance before start of MDA (a)	No. of drugs received for current round (b)	No. of drugs used during MDA round (c)	No. of drugs damaged during MDA round (d)	No. of drugs used in regular OPD etc (e)	Total balance remaining after MDA round = a + b –(c+d+e) (opening balance for the next round)	No. of tablets expiring	Batch no.

Annexure 9.10: Table - 10: Line Listing of Filaria Patients

Name of the District

Name of the PHC/CHC

Registration no. *(AA-BBB-CCC-##-###-H)*	Name of the Patient	Name of Head of Family	Phone number of Patient/ Head of Family	Address of Patient (Village name)	Name of the sub Centre	Age of Patient	Sex of Patient	Disease Affected Part (Put relevant code) *	Date of Examination by Medical Officer (dd/mm/yy)	Stage**	Present status of case 1. Continuing 2. Died 3. Undergone hydrocelectomy				
											Year 1	Year 2	Year 3	Year 4	Year 5
Total LF patients line listed:_____ Total Lymphedema patients:_____ Total Hydrocele patients:_____															

***Codes: LL- Left leg, RL- Right Leg, LA- Left Arm, RA-Right Arm, H-Hydrocele, L- Left Breast, RB- Right Breast, B- Both (L&H), O-Other**

**Stage as assessed by MO in districts/ states where there is a financial implication at present or in future

Stage 1 : Lymphoedema reversible overnight

Stage 2 : Irreversible lymphoedema with normal skin

Stage 3 : Irreversible lymphoedema with thickened skin and shallow folds whose base is visible

Stage 4 : Irreversible lymphoedema with knobs (bumps and lump)

Stage 5 : Irreversible lymphoedema with deep folds whose base is visible when separated by finger

Stage 6 : Irreversible lymphoedema with mossy foot

Stage 7 : With irreversible lymphoedema, disability to do routine activities adequately. Patient incapacitated

Annexure 9.11 Table - 11: Monthly MMDP report

Name of District: _____ **Month :** _____

S.No.	Name of block	Mobile no of MOIC/ Nodal person at Block PHC	All Lymphedema cases					All Hydrocele cases		
			Number of cases presented with ADL	No of cases treated for ADL	No of cases trained on MMDP	No. of cases given MMDP kits	No followed up	Total no. of Hydrocele cases	Number of hydrocelectomies done in the month	No. ineligible for surgery

**Stage as assessed by MO:

- Stage 1 : Lymphoedema reversible overnight;
- Stage 2 : Irreversible lymphoedema with normal skin;
- Stage 3 : Irreversible lymphoedema with thickened skin and shallow folds whose base is visible
- Stage 4 : Irreversible lymphoedema with knobs (bumps and lump);
- Stage 5 : Irreversible lymphoedema with deep folds whose base is visible when separated by finger
- Stage 6 : Irreversible lymphoedema with mossy foot;

Annexure 9.12 Table- 12: Details of DCC and BCC Meetings in year ------

(To be submitted post MDA round)				
1. Details of DCC meetings				
Name of the district:_____				
Details of DCC meetings	**First DCC Meeting (60 days before MDA)**	**Second DCC Meeting (15 Days before MDA)**	**Third DCC meeting (25 days after MDA)**	
Date				
Duration of discussion on ELF and MDA				
Person who chaired (DM, CDO, ED Zila Parishad, Other)				
Total no of participants				
Participation of representatives from key departments: (Please circle all as per the presence)	Health, Education, ICDS, Urban planning, NUHM, PRI, SHG,Social Development, NGOs, professional bodies	Health, Education, ICDS, Urban planning, NUHM, PRI, SHG,Social Development, NGOs, professional bodies	Health, Education, ICDS, Urban planning, NUHM, PRI, SHG,Social Development, NGOs , professional bodies	CMO- Y/N ACMO-VBD-Y/N DMO/DVBDCO-Y/N PRI- Y/N ICDS-Y/N Primary Education-YN Urban development /Municiplity-Y/N; Medical College - Y/N/NA
Whether minutes of meeting are available? Y/N (if yes, share)				
Key directives issued for MDA execution				
Follow up from previous DCC meeting on key decisons (as relevant)				

2. Details of BCC meetings (Continuation of 6.12)								
	Block name	**Block name**	**Block name**	**Block name**	**No of meetings (Dates seperated by comma)**	**Key participant's names and designations**	**Whether minutes of meeting are available? Y/N (if available, please attach)**	**Key issues discussed:**
Date and Duration of discussion on ELF and MDA								
Person who chaired (SDM, BDO, MOIC, Other)								
Participation of representatives from key departments: (Please mention)								
Whether minutes of meeting are available? Y/N								
Key directives issued for MDA execution								
No. of meetings held								

- **Add columns to add more number of blocks**

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