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Research Article

Mass Drug Administration (MDA) for Lymphatic Filariasis Elimination in Uttar Pradesh : Lessons Learnt

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A B S T R A C T

Lymphatic Filariasis (LF) and Kala-azar (KA) are the two Vector Borne Diseases (VBD) slated for elimination by the Government of India. The target set for lymphatic filariasis elimination is < 1% microfilariamia in a given area. 51 districts of Eastern Uttar Pradesh are endemic for LF and are under Elimination of Lymphatic Filariasis (ELF). In order to ensure the elimination of the disease from the community, mass drug administration (MDA) is being observed in these 51 districts since 2004.

This paper contains an in-depth analysis and review of MDA rounds conducted in Uttar Pradesh since the year 2004 including the data on drug coverage and compliance in each endemic district, mf rate in sentinel and spot check sites, and disease cases (elephantiasis and hydrocoele). It also includes the findings of Transmission Assessment Surveys (TAS) conducted in the eligible districts and other relevant data which were analysed during this period. The main objective of this study was to find out the possible gaps in programme implementation, various issues and challenges ahead, and lessons learnt at various levels of the programme implementation. As a result of keeping a close vigil on the implementation of MDA in the state, various lessons were learnt for not achieving the elimination target, which have been raised in this paper, which may be considered by the state for better programme implementation. This paper also discusses the possible remedies for their rectification, so that the state may make use of them in achieving the goal of elimination of this dreaded vector-borne disease.

Keywords: Microfilaria, Lymphatic Filariasis, Mass Drug Administration, DEC, Night Blood Survey, Drug Compliance

Introduction

In accordance with the World Health Assembly's (WHA) resolution WHA 50.29 to eliminate Lymphatic Filariasis (LF) disease from the globe by the year 2020, India has also set its goal of Elimination of Lymphatic Filariasis (ELF) through its National Health Policy (2002)[1,2] from the country by 2015 (afterwards 2020 and now 2027). The twin pillars of the LF elimination strategy included: (a) Interruption of disease transmission through mass drug administration (MDA) & (b) Morbidity Management and Disability Prevention (MMDP).

To interrupt LF transmission, mass drug administration (MDA) had to be observed for consecutive five years since 2004 by administering only diethylcarbamazine citrate (DEC) once a year to all age groups above 2 years of age, pregnant women and seriously ill/ old persons. Later on, one more drug albendazole (400 mg) was added along with DEC in 2008 to have an effect on the adult worm too together with mf, therefore resulting destruction of the parasite in immature and mature forms preventing the infected person from becoming a source of infection for vector and ultimately healthy persons and from developing clinical manifestation. One more third drug, Ivermectin was added along with the other two drugs and the drug schedule accorded to the height of the person in district Varanasi in February 2019; thus, the MDA was named as IDA. Since then, district Varanasi has completed three rounds of IDA and one-third of filarial endemic districts of the state have completed two rounds of IDA but no one other than district Rampur has cleared the TAS-1 level. Three more districts namely Bareilly, Lucknow and Raebareli have conducted IDA in 2022 for the first time but have not conducted a Night Blood Survey (NBS) in accordance with those districts observed IDA.

MMDP is the second pillar of the strategy of ELF, under which lymphoedema cases are being imparted training in home-based care and management and hydrocele operations are being performed at identified CHCs/ District hospitals/ Medical colleges in order to alleviate the sufferers and reduce the disease load among the community.

As per WHO/ NCVBDC guidelines, the administration of drugs to 65% of the total population or 85% of the eligible population for five consecutive years will bring down the microfilarimia < 1% among the endemic population, ultimately leading to the elimination of the disease. This is further assessed by conducting a transmission assessment survey (TAS)[3] thrice at an interval of two years among the virgin/ protected group of children i.e., 6 to 7 years. The Transmission Assessment Survey (TAS) is conducted after ensuring < 1% microfilarimia in 10 additional sites selected randomly. For any district to be eligible for TAS; (a) It must have conducted consecutive five rounds of MDA, (b) about 65% of epidemiological coverage, and (c) less than 1% of mf rate in both random and sentinel sites.

In the beginning, the date of National Filaria Day (NFD) was fixed i.e. June 5, 2004 and thereafter on November 11 for conducting MDA at one time, for which time-framed activities were chalked out to be followed by states/ UTs, but it has been observed that MDA is not keeping pace with national guidelines. There is no fixed date for conducting MDA and administration of the drug is stretched over a month's period. It is largely governed by the availability of funds, availability and procurement of drugs (DEC/ albendazole/ ivermectin), and local situations viz. floods, elections, holidays etc. Uncertainty for MDA leads to delays in timely preparation and implementation of micro-plan of state and district as per the National guidelines. Inadequate funds/ logistics/ supplies and quality of supplies have had adverse effects on the NFCP programme implementation at the district headquarters level in 31 districts.[4] Although the NFCP personnel available in the districts are not actively involved[4,5] to work in their area of jurisdiction and are responsive for qualitative work under their specified duties[6]. Moreover, the majority of districts have been provided with fresh and inexperienced district vector-borne disease consultants, though the districts already have well-experienced, qualified and technically trained district programme officers, to plan and implement the programme in the districts. VBD consultants are neither taking part in ELF activities nor any other VBD control activities, merely putting an additional financial burden on the government and creating uncertainty regarding their own carrier. The ELF implementation started with health infrastructure only but thereafter NGOs like Project Concern International (PCI), Bill Milinda Gates Foundation (BMGF), Program for Appropriate Technology in Health (PATH), World Health Organization (WHO) partners are supporting NCVBDC after 2016 and are being utilised for convergence of the community for consuming the drug and technical support in terms of orientation to district level officers as well as field personnel as per National Guidelines for LF elimination. In addition to this, intensive and sustainable IEC activities (in different forms) at different levels of programme implementation are also needed to make the MDA programme more successful and to enhance compliance.

Material and Method

The various activities in the state pertaining to the ELF and other vector-borne diseases are being coordinated by NVBDCP, Delhi as well as through its Regional Office of Health & Family Welfare (ROH&FW), Lucknow from time to time. The close vigil was kept by ROH&FW, Lucknow on various MDA activities conducted in the 51 districts of the state since 2004 and were closely observed, monitored and

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analysed at state, district, CHC/ PHC and sub-centre levels in order to find out the various reasons, not succeeding the state in achieving the goal of LF elimination in spite of its best efforts even after conducting > 15 rounds of MDA since 2004. The possible reasons for the programme implementation at various levels have been discussed in the present paper, the rectification of which may lead the state to achieve the goal of elimination of the disease set by the Government of India.

Gorakhpur and Varanasi of Uttar Pradesh were among the thirteen (13) districts of the country, where a pilot project was launched in 1997 to evaluate the efficacy of DEC in reducing mf load/ density in the community through MDA. The encouraging results obtained in the pilot study of these districts, the MDA programme was launched in the country in June 2004, in which 20 districts of UP were also included and later on scaled up to 50 districts in 2005 and 51 in 2012. Although these two districts have completed > 20 rounds of MDA, none of these could qualify for conducting the TAS-1. The necessary monitoring feedback is also shared with the State Programme Officer (SPO) for further improvement in the programme implementation.

Results and Discussion

The average drug compliance coverage in respect of total and eligible population under MDA in Uttar Pradesh from 2004 to 2019 is presented in Table 1. It is evident from Table 1 that MDA coverage in terms of drug compliance to the total endemic population and targeted population ranged from 19.65% (2011) to 75.43% (2015) and 24.43% (2011) to 89.46% (2015), respectively. Unavoidable circumstances did not permit to conduct MDA during 2009 in the state. In the years 2020 and 2021, MDA activities in the state were adversely affected due to the COVID-19 pandemic. It is obvious from Table 1 that the drug compliance target of > 65% with respect to the total population was achieved after 2005, except the year 2013, when it remained below this target,

Whereas, in respect of the eligible population, the target of > 85% drug compliance coverage of the endemic population was achieved in the years 2015 and 2017. Thus, variation in the two drug coverage is not keeping pace with each other, which is necessary to achieve the goal of elimination of the disease.

Table 1.Drug Compliance Coverage of Population under MDA in Uttar Pradesh from 2004 to 2019

S. No.	Year	No. of LF Endemic Districts Covered	% Drug Compliance Coverage Against Eligible Population	% Drug Compliance Coverage Against Total Population
1.	2004	20	66.40	58.44
2.	2005	50	71.03	62.37
3.	2006	50	75.97	66.59
4.	2007	50	79.87	68.75
5.	2008	50	83.35	72.01
6.	2009	00	MDA not conducted	
7.	2010	50	80.68	70.95
8.	2011	14	24.43	19.65
9.	2012	51	83.15	70.58
10.	2013	51	70.69	58.79
11.	2014	51	83.63	70.50
12.	2015	33	89.46	75.43
13.	2016	15	84.62	71.32
14.	2017	47	86.38	73.37
15.	2018	50	83.25	70.99
16.	2019	31	-	74.96

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Thus, as a whole, the state on the basis of this average coverage does not fulfil the criteria of drug compliance 65% and 85% to total LF endemic & eligible populations at least in the continued five MDAs, respectively. The parasitological survey (Night Blood Survey) carried out prior to the MDA observance reflected a gradual decline in the microfilaria positivity < 1% from 2004 to 2016 but increased thereafter as the close monitoring and cross-check of blood smears was carried out from ROH & FW, Lucknow. Considering the microfilaria positivity < 1% and epidemiological drug compliance > 65% in continued five MDAs, lead the state for proceeding towards the next step of elimination of the disease i.e. transmission Assessment Survey (TAS), which is conducted thrice at an interval of two years. There is a gradual decline in the disease cases (lymphedema & hydrocele both) but contrary to the national disease prevalence, a gradual increase among the population is reported. On the basis of prevailing data, some districts fulfilled the criteria of drug compliance and prevalence of microfilaria positivity < 1%, and were subjected to TAS-1 from 2015-16 to 2020-21, the account of which has been furnished in Table 2. It is pertinent to mention here that district Rampur has cleared TAS-1, TAS-2 and TAS-3 and is under progression of further process of ELF.

Table 2.Details of Transmission Assessment Survey (TAS) Conducted in Uttar Pradesh from 2015 to 2020

Year of TAS	Total Number of Districts Eligible for TAS	Number of Districts Qualified to Conduct TAS-I	Number of Districts Not Qualified to Conduct TAS-I	Number/ Name of Districts Clearing TAS-I	Number of Districts Not Clearing TAS-I	Reasons for Not Clearing/ Not Qualifying for TAS-I
2015	18	16	2	04 (Chandauli, Etawah, Kaushambi & Rampur)	12	These districts reflected high filarial antigenemia which was above the permissible limit of 2%.
2016	18	0	18	0	0	None of the districts qualified to conduct TAS-I due to more than 1% of the mf rate in at least one additional mf survey site.
2017	3	0	3	0	0	-do-
2018	8	0	8	0	0	These districts reflected high (8.36% to 22.71%) filarial antigenemia in four sentinel sites with a sample size of 300 tests with FTS, which was above the permissible limit of 2%.
2019	4	0	4	0	0	-do- filarial antigenemia (13.80% to 20.55%)
2020	1	0	1	0	0	-do- 300 tests with FTS in each of the 10 villages of each of the four EUs, reflected filarial antigenemia (3.89% to 8.80%)

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In 2016-17, 18 districts reflected > 1% microfilariamia (mf) in at least one survey site out of 10 additional random survey sites of each district. Hence no district could clear the criteria for conducting TAS-1, yet TAS-1 was conducted in districts Varanasi and Hardoi**,** which reflected of antigenemia positivity 7.11% and 10.58%, respectively, much higher than the permissible limit of 2% antigenemia positivity in disease elimination stage. The night blood survey (NBS) in random 10 additional sites was changed and replaced by conducting 300 tests with FTS in four sentinel sites (three rural and one urban) in 2018-19 and 2019-20, which reflected 8.36% to 22.71% and 13.80% to 20.55% antigenemia positivity, respectively. In the year 2020-21, the strategy of conducting additional surveys in the district Sultanpur was changed. So far, the district as a whole is considered an implementation unit (IU) and the evaluation unit (EU) comprises a population not exceeding 2 million people, but in conducting the additional survey, district Sultanpur was divided into four EUs, each EU consisted of two to five PHCs. 10 villages from each EU were selected to perform at least 300 tests with FTS in each village/ site. The district reflected 6.63% (3.89% to 8.80%) filarial antigenemia in all four EUs, which was much higher than the permissible limit of 2% filarial antigenemia. This district was subjected to an additional survey with FTS in 2018-19 when all four sentinel sites reflected 2.61% 17.33% filarial antigenemia. Without any change in technical or operational input, the strategy was changed in district Sultanpur in 2020-21, which could not help in conducting the TAS-1 but it seems that the direct TAS-1 was conducted in Sultanpur in 2020-21 knowingly when the district was reporting high filarial antigenemia only one year prior to this strategic change.

Now, the National Programme through an unpublished document issued in 2022, the implementation unit (IU) has been changed to a developmental block of the district, each of which will consist of one sentinel and one spot check site with test sample size of 300 blood samples (blood smears) for microfilaria tests from each site for MDA impact assessment and three random/ additional sites (two sites with greatest risk and one random) with test sample size of 300 blood samples from each site in Pre-TAS assessment. The subjects for the test will constitute people > 20 years of age. In the Pre-TAS survey, tests on 300 blood samples will be performed from each of three additional sites using FTS and all filarial antigenemia positives (Ag > 2%) will be subjected to NBS to confirm the presence of microfilariae and mf rate will be calculated on the basis of the following formula:

$$\text{Mf rate (\%)} = \frac{\text{(Total cases found +ve with NBS)}}{\text{(Total cases examined with FTS) – (any invalid cases removed from the sample)}} \times 100$$

The evaluation unit (EU) will have a population of five lakh and will consist of more than one block population instead of the two million population in the earlier strategy. However, the districts that have already cleared any TAS in the past with an EU population of two million will continue with the strategy followed so far. Thus, there has been a change in strategic implementation since 2022.

It is pertinent to mention here that the attention of higher authorities of the state, as well as the centre was drawn towards various issues and gaps to mitigate the challenges of achieving the goal of disease elimination.[4] It is imperative from the foregoing observations and discussion that the consumption of the drug by the epidemiological or eligible population of endemic areas up to the stipulated target is the main concern and a clear lesson is being perceived for drug compliance coverage reported so is not the real coverage, which may be far below the reported coverage. The community is not consuming the drug, due to which success is not being achieved to proceed forward for TAS and the second lesson for night blood survey (NBS), which is conducted to assess the impact of the drug administered to bring down mf < 1% has not been qualitative. The reasons affecting the implementation of both major activities may be described as follows:

Drug Compliance/ Coverage during the MDA Programme

The low drug compliance can be attributed to the facts that:

- As per the ELF guidelines,[2] there is a road map for preparatory activities of MDA planning and implementation, but the action in the state is not adhered to in accordance.
- The MDA has been scheduled for one day with 2 days for mop-up but this has been extended from 2 weeks to one month or more, which has diluted the importance of drug consumption, for both, the drug administrator as well as the beneficiary.
- The supervisory tier has been very poor in supervising the drug administration by the drug administrator as there is no provision of honorarium and mobility support for supervisors.
- The drug administrators are still distributing the drugs as the drug is still being recovered from the community, though there has been some improvement over past time.
- The drug administrators include ASHA, Anganwadi workers and NGOs, who cannot be made accountable for irregularities done in drug administration. The maximum penalty that can be fixed for irregularities is non-payment of the honorarium, for which they are still deprived at many places as has been brought to the notice in field visits. The accountability of higher supervisory tier deployed from permanently employed personnel may bring improvement in drug compliance by the community.

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- The awareness among the community for drug compliance was found poor as the IEC/ BCC activities are done for a shorter/ limited duration, which may be conducted all through the year with the help of partner NGOs along with other activities.
- The addition of a third drug, ivermectin along with DEC and albendazole could not reduce or eliminate the microfilaria from the community as 50% of blocks (the IU as per new strategic change) reported mf positivity, of which two-thirds of blocks reported > 1% microfilariae (Table 3), even after conducting two rounds of IDA, whereas 12-21% blocks of district Varanasi also reported microfilariae even after conducting 3 rounds of IDA, which may be possibly due to the fact that the drug was not consumed by the beneficiaries as drugs were recovered from the community in 2022 when NGOs are supporting variously as well as these districts except Chandauli and Kanpur Dehat have well established NFCP set up.
- One round of IDA was conducted in district Bareilly (from November 22, 2021 to December 7, 2021), in district Raebareli (from March 12, 2022 to March 31, 2022) and in district Lucknow (from February 10, 2023 to February 27, 2023), but the strategy adopted for NBS in other 12 districts was not followed. The routine NBS was done as usual in four sentinels (one urban + three rural) and four spot checks (one urban + three rural), from April to September 2021; March 2022 and 2021, respectively. Thus different methodology was exercised in these three districts instead of the developmental block of the district, which is to be considered as IU, each of which will consist of one sentinel and one spot check site with a test sample size of 300 blood samples (blood smears) for microfilaria tests, whereas the test subjects will constitute people > 20 years of age. Thus, the findings of the IDA districts cannot be comparable with two different methodologies of the NBS.
- The consideration of mf positivity reported from the NBS test of age group > 20 years is not justifiable because the people < 20 years age group also possess high mf positivity, which ranged from 20.00% (16.67%) to 45.00% (42.86%) (Tables 4a-4i) in surveys conducted in the past with > 1% prevalence. Exclusion of the < 20 years age group, undoubtedly will make the 0 (zero) mf reporting areas but in reality, will not be free from mf positivity as the < 20 years age group also possesses high mf positivity, 20.00% to 45.00%, which will be left liberally free as a good reservoir to maintain the active LF transmission and the goal of the ELF will be forfeited. Thus, the exercise for disease elimination will be futile and one would not be able to reduce/ eliminate the parasitic load from the community.
- Drug compliance by the community in the urban areas is also not of the desired level as the microfilariae are being reported in the area of jurisdiction of NFCP (Table 4h). Had these NFCP set up seriously discharged their duties, at least 31 urban areas with NFCP set up would have brought the mf prevalence < 1% poor attention of higher officials of the program Could not archive the desired impact and accordingly achievement. It is pertinent to mention here that NFCP staff is not serious towards its duties and does not discharge duties in accordance with NFCP (NCVBDC erstwhile NVBDCP) guidelines. It hardly matters whether you work or not in NFCP, but will enjoy full salary payment as a pension and will remain posted till superannuation at the place, where you joined the duties.
- Varanasi and Gorakhpur are two districts that have conducted five more MDA rounds in a pilot study in comparison to the other 48 districts subjected to ELF. District Varanasi has also conducted three rounds of IDA and must have eliminated the disease till now together with district Gorakhpur as both have completed > 20 rounds of MDA, but they have not qualified for the first step to conduct TAS-1. Both the districts have well-established NFCP setups and are constituencies of high-profile political dignities. The opportunities of the two high profile-dignities in exploring the resources towards ELF must have been exercised but rather than working for the programme, the NFCP personnel are engaged in other work, for which they are not paid and consequently not qualified. Thus, such steps of the state do not fulfil the requirements of the programme but adversely affect the programme's functioning.
- The reason of using two drugs in 2/3rd districts and three drugs in 1/3rd districts.

Night Blood Survey (NBS) in the Endemic Areas

The poor performance can be attributed to the facts that:

- The plan of NBS is not prepared and implemented seriously for which specialised trained technicians are required along with other logistic support. The technicians trained are many a time substituted with the untrained technicians.
- The NBS must be conducted after six months of the preceding MDA/ IDA but it is more often conducted in the MDA/ IDA month duration, affecting the quality of preparation as well as examination.[4]
- The NBS sample size in the previous strategy was 4000-5000 blood slides @ 500 blood slides from each of the 8 or 10 sites but it has been @ 300 blood slides from each of the 2 sites per block in the revised strategy accumulating > 26000 blood slides in districts with 44 blocks or so, thereby increasing the sample size up to 5 times, which may affect the quality in available resources. In the revised strategy, the subjects for the

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test will constitute people > 20 years of age, which will not be justifiable because the people < 20 years age groups having mf positivity, from 20.00% (16.67%) to 45.00 % (42.86%) (Tables 4a-4i) will be declared 0 (zero) mf reporting sites, which will be left liberally free as good reservoir of microfilaria to maintain the active LF transmission.

- The blood slides are not being sent to the Regional Office of Health & Family Welfare, Lucknow (GoI) as per the guidelines for cross-checking in spite of the repeated reminders.

Table 3.Night Blood Survey (NBS) findings condicted block/wardwise each with one sentinel and one random site in 2022 in districts of U.P. that have completed at least 02 rounds of IDA

S.No.	Name of District	Sentinel sites				Random sites			
		Total No of .sites	No. of sites reported m.f	No. of sites reported m.f >1%	**m.f. rate(%) of sites >1% as per column 5**	Total No. of sites	No. of sites reported m.f	No. of sites reported m.f >1%	**m.f. rate(%) of sites >1% as per column 9**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	Chandauli	10	3	3	2.00, 4.00, 6.41	10	4	4	1.00, 1.66,2.62, 9.80
2	Fatehpur	14	8	5	1.00, 1.33, 2.00, 2.61, 6.17	14	9	3	1.00, 1.86, 2.33
3	Hardoi	20	5	4	1.31, 1.67, 2.97, 5.63	20	4	4	0.99, 1.32, 1.33, 3.62
4	Kanpur Dehat	10	9	6	1.00, 1.33, 2.00,2.67, 3.00, 4.67	10	9	4	1.67, 2.67, 2.98, 4.26
5	Kanpur Nagar	21	10	8	1.67, 2.00, 2.33, 3.04, 4.67, 4.67, 6.00, 6.23	21	7	5	2.00, 2.32, 2.67, 5.33, 7.24
6	Kheri	16	14	10	1.67, 1.99,2.65, 2.65, 3.33, 3.67, 5.00, 5.32, 5.67, 5.67	16	14	10	0.99, 0.99, 1.33, 1.63,1.67,2.33,3.00, 4.33, 7.00, 8.82
7	Mirzapur	13	11	7	1.33, 1.94, 1.99, 2.33, 4.95, 6.15, 6.67	13	10	7	1.00, 1.31, 1.87, 3.00, 3.33, 4.64, 7.71
8	Pratapgarh	16	4	2	1.94, 3.65	16	6	3	1.64, 2.00, 3.10
9	Prayagraj	44	10	6	1.32, 1.63, 2.11, 3.58, 3.92, 6.19	44	11	7	0.98, 1.63, 1.65, 1.95,2.99, 3.28, 4.95
10	Sitapur	20	15	10	1.00, 1.33, 1.67, 1.67, 2.37, 3.76, 3.96, 4.00, 5.33, 9.33	20	14	7	1.67, 2.08, 4.29, 4.93, 5.67, 7.97, 10.96
11	Unnao	18	6	3	1.67, 2.00, 2.67	18	7	1	4.95
	TOTAL (A)	**202**	**95**	**64**		**202**	**95**	**55**	
			47% of Col.3	32% of Col.3 &67% of Col4			47% of Col.7	32% of Col.7 &58% of Col 8	
12	Varanasi*	33	4	1	1.00	33	7	1	1.67
	TOTAL (B)	**33**	**4**	**1**		**33**	**7**	**1**	
GRAND TOTAL (A+B)		**235**	**99**	**65**		**235**	**102**	**56**	
	* Completed 3 rounds of IDA								

Table 4(a).Details of Mf Positives of Village Atwa Ali Mardanpur under Subcentre Shahabda & PHC Madhoganj, District Hardoi in September 2016

S. No.	Name of the Resident	Son/ Daughter/ Wife of	Age (Years)	Sex	Mf No. per B/S	Remark
1.	Smt Chandrakanti	Sri Guddu	35	F	03	Mf positivity was reported in 22% of cases in the < 20 years age group on this site with a good density of mf.
2.	Archana	Sri Mangal Prasad	17	F	01	
3.	Smt Suman	Sri Sushil	22	F	50	
4.	Smt Jagrani	Sri Bechan	65	F	01	
5.	Smt Guddi	Sri Rajkumar	40	F	14	
6.	Rajni	Sri Shiv Pal Singh	15	F	52	
7.	Sri Shiv Pal	Sri Reewa	55	M	02	
8.	Amit Kumar	Sri Vinod Kumar	24	M	01	
9.	Lochan	Sri Cheena	60	M	06	
	Total				130	

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Table 4(b).Details of Mf Positives of Village Keyoti Khwajajipur under Subcentre Khwajajipur & PHC Madhoganj, District Hardoi in September 2016

S. No.	Name of the Resident	Son/ Daughter/ Wife of	Age (Years)	Sex	Mf No. per B/S	Remark
1.	Indra Pal	Sri Tika Ram	31	M	01	16.67% of cases in the < 20 years age group reported mf positivity
2.	Suman Devi	Sri Man Singh	26	F	01	
3.	Musadi	Sri Jageshwar	38	M	08	
4.	Talib	Sri Saleem	18	M	02	
5.	Suresh	Sri Ramsahai	48	M	03	
6.	Jaubra Begum	Sri Navi Baksh	60	F	47	
	Total				62	

Table 4(c).Details of Mf Positives of Village Chand Behta under Subcentre Muraliganj & PHC Tandiyawan, District Hardoi in September 2016

S. No.	Name of the Resident	Son/ Daughter/ Wife of	Age (Years)	Sex	Mf No. per B/S	Remark
1.	Mr Dinesh	Sri Natthu	22	M	02	42.86% of cases in the < 20 years age group reported mf positivity with good mf density
2.	Miss Aasi	Sri Sant Ram Pal	15	F	13	
3.	Anshika	Sri Rakesh Kumar	06	F	32	
4.	Mahdei	Sri Chironji Lal	60	F	02	
5.	Laxmi	Sri Ram Avtar	35	F	04	
6.	Mr Dhani Ram	Sri Hori Lal	38	M	16	
7.	Keshav	Sri Ghanshyam	04	M	02	
	Total				71	

Table 4(d).Details of Mf Positives of Village Para Pratappur, under PHC Chaubepur of District Kanpur Nagar in October 2016

S. No.	Name of the Resident	Son/ Daughter/ Wife of	Age (Years)	Sex	Mf No. per B/S	Remark
1.	Sneha	Sri Lal Chandra	14	F	05	40.00% of cases in the < 20 years age group reported mf positivity
2.	Deepika	Sri Prakash Chandra	12	F	06	
3.	Smt Mamta	Sri Shrikant	30	F	05	
4.	Smt Sarojani	Sri Vinod Kumar	32	F	03	
5.	Ranjan Singh	Sri Tej Bahadur Singh	38	M	04	

Morbidity Management & Disability Prevention (MMDP)

MMDP is a regular process, the prevalence of lymphoedema and hydrocele cases among the community is updated by the state in its data does not look fair on its part. The resources from the supported partners can be managed to eliminate the hydrocele cases by performing the hydrocelectomy in special camps. Availability of adequate funds for conducting training in home-based management of lymphoedema in all cases may be provisioned by the state health authorities.

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Table 4(e).Details of Mf Positives of Village Mithleshpur, under Subcentre Sangasiyapur, PHC Akbarpur of District Kanpur Dehat in October 2016

S. No.	Name of the Resident	Son/ Daughter/ Wife of	Age (Years)	Sex	Mf No. per B/S	Remark
1.	Guddi	Sri Rajjan	45	F	70	42.86% of cases in the < 20 years age group reported mf positivity with good mf density.
2.	Guddi	Sri Santosh	38	F	40	
3.	Sandeep	Sri Suresh	14	M	65	
4.	Sumeet	Sri Suresh	07	M	06	
5.	Seema	Sri Jagram	35	F	05	
6.	Satyam	Sri Jagram	13	M	06	
7.	Pancham	Sri Jurakkhan	55	M	08	

Table 4(f).Details of Mf Positives of Village Katingra under PHC Kakori of District Lucknow in October 2016

S. No.	Name of the Resident	Son/ Daughter/ Wife of	Age (Years)	Sex	Mf No. per B/S	Remark
1.	Surendra Yadav	Sri Mahipal Yadav	25	M	115	25.00% of cases in the < 20 years age group reported mf positivity with good mf density.
2.	Mohd Salman	Sri Rajjan Ali	23	M	25	
3.	Ramjan Ali	Sri Tej Ali	65	M	21	
4.	Kanti	Sri Jagdish	42	F	50	
5.	Mahavir	Swayam	60	M	04	
6.	Miss Muskan	Babloo	08	F	12	
7.	Kuldeep Singh	Sri Rajdev Singh	30	M	04	
8.	Miss Soni	Sri Hari Prakash	14	F	05	

Table 4(g).Details of Mf Positives of Town Area Satrikh under CHC Satrikh, District Barabanki in October 2017

S. No.	Name of the Resident	Son/ Daughter/ Wife of	Age (Years)	Sex	Mf No. per B/S	Remarks
1.	Ram Samujh	Ram Dulare	38	M	01	41.37% of cases in the < 20 years age group reported mf positivity with good mf density.
2.	Santosh	Hari Lal	17	M	04	
3.	Devi Dayal	Mangal Prasad	24	M	28	
4.	Lucky	Harinam	12	M	49	
5.	Vishwa Nath	Self	65	M	06	
6.	Pankaj	Vishwa Nath	18	M	14	
7.	Imran	Masoom Ali	16	M	03	
8.	Mohd Amir	Nusarat Ali	17	M	01	
9.	Mohd Hanif	Self	50	M	65	
10.	Mohd Imran	Masoom	16	M	08	
11.	Gudiya	Umesh Kumar	30	F	02	
12.	Rajni Verma	Ratanvari Verma	16	F	22	
13.	Aradhya	Ratanvari Verma	06	F	04	
14.	Pramod	Ram Khilawan	40	M	24	

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15.	Vasudev	Self	70	M	06	
16.	Meenu	Pravesh	40	M	04	
17.	Karunesh	Self	50	M	08	
18.	Karan	Vinod	20	M	06	
19.	Dileep	Baboo Lal	30	M	56	
20.	Vasudev	Self	60	M	02	
21.	Dev	Bhanu	16	M	08	
22.	Akash	Shiv Prakash	26	M	17	
23.	Om Prakash	Shiv Prakash	20	M	06	
24.	Pradeep	Gaja Nand	42	M	03	
25.	Taravati	Hanuman Prasad	40	F	12	
26.	Neha	Dhirender	16	F	07	
27.	Daya Ram	Avadh Ram	22	M	01	
28.	Priya	Virender Verma	16	F	05	
29.	Riya	Virender Verma	14	F	04	
	Total				378	

Table 4(h).Details of Mf Positives of Moh Pirbatan, under the Urban Area of Barabanki, District Barabanki in October 2017

S. No.	Name of the Resident	Son/ Daughter /Wife of	Age (Years)	Sex	Mf No. per B/S	Remarks
1.	Aaisha Bano	Mohd Anwar	35	F	03	40.00% of cases in the < 20 years age group reported mf positivity with good mf density
2.	Mohd Alim	Shakir Ali	16	M	30	
3.	Mohd Arif	Mohd Farid Ahmad	11	M	01	
4.	Mohd Musarraf	Mohd Raj Mohammad	15	M	100	
5.	Ravi Kumar	Ram Sagar	20	M	07	
6.	Mohd Rihan	Hafiz Mohammad	17	M	06	
7.	Mohd Hasib	Mohd Shafiq	22	M	08	
8.	Shree Devi	Ram Lal	27	F	06	
9.	Rajesh	Rameshwar	45	M	01	
10.	Sakir Ali	Rahmat Ali	35	M	20	
	Total				182	

Table 4(i).Details of Mf Positives of Village Koilasa under PHC Koilasa of District Azamgarh in October 2017

S. No.	Name of the Resident	Son/ Daughter/ Wife of	Age (Years)	Sex	Mf No. per B/S	Remarks
1	Ram Milan	Shiv Chand	34	M	30	25.00% of cases in the < 20 years age group reported mf positivity with good mf density.
2	Krishna	Nand Lal	08	M	35	
3	Nisha	Sonu	36	F	06	
4	Devesh	Tuntun	17	M	05	
5	Sarita Gupta	Paltoo	48	F	02	
6	Radhey Shyam	Nageshwar	42	M	03	

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7	Avanish	Nageshwar	30	M	19	
8	Ajay Yadav	Badri Yadav	35	M	07	
	Total				107	

Conclusion

It can be concluded from the above description that for the elimination of the LF disease, the consumption of the drug can be enhanced by generating the felt need among the community through extended round year IEC/ BCC activities through supporting partners and NFCP set up may be made accountable to perform in accordance with the NFCP guidelines for drug consumption in their area of jurisdiction. Moreover, the NFCP staff should be actively involved in performing the qualitative NBS and in conducting training for other companion staff in the district. MMDP is to be effectively undertaken by undertaking hydrocelectomy of all cases and ensuring their complete treatment if found positive for mf. The exclusion of the < 20 years age group, undoubtedly will make the 0 (zero) mf reporting areas but in reality, will not be free from mf positivity as the < 20 years age group also possesses high mf positivity, 20.00% to 45.00%, which will be left liberally free as a good reservoir to maintain the active LF transmission and the goal of the ELF will be forfeited.

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