

## Mass Drugs Administration in India - A Failure Story

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### Abstract

Lymphatic Filariasis (LF), a mosquito borne parasitic disease, has been endemic in India since antiquity. Following World Health Assembly Resolution (1997), India launched annual Mass Drugs Administration (MDA) in 2004 as strategy to eliminate LF. The drug consumption was persistently low due to different operational and behavioral problems and lack of public health approaches. The country has already missed the elimination target of 2015 as per National Health Policy and is sure to fail to achieve WHO target of elimination by 2020. The author has suggested switching over to use of DEC medicated salt in place of MDA in endemic areas being simple, cost effective, scientific and socially acceptable tool to achieve elimination of LF quickly and without the hassle of indefinite rounds of MDA.

**Keywords:** Lymphatic filariasis; Drug administration; India; Population; MDA; DEC-medicated salt

### Introduction

Lymphatic Filariasis (LF), a mosquito borne parasitic disease, has been endemic in India since antiquity [1]. The chronic form of disease is mainly manifested and becomes visible as hydrocele and lymphoedema. LF, as such, is a benign disease without mortality and outbreak potential [2]. Both the parasite and vector mosquito of LF are known to be inefficient in transmission of infection [3].

Following World Health Assembly Resolution [4] during 1997, India launched observance of annual Mass Drug Administration (MDA) [5] during 2004 with DEC tablets to all eligible population (which excluded pregnant women, children below 2 years and seriously ill persons), in 204 endemic areas [5] called Implementation Units (IUs) with the object to eliminate LF from the country. The IEC/BCC activities with social mobilization were added as supporting tools of MDA. As per National Health Policy (2002) of India, Elimination of Lymphatic Filariasis (ELF) was to be achieved by 2015 [6]. The country has already failed there. Presently as per WHO Global Goal, India is committed to achieve ELF by 2020 [7].

WHO envisaged five to six continuous annual rounds of MDA [8] with at least 65% population drug coverage [9] (consumption) for interruption of transmission of LF infection in IUs. Annual MDA would then be stopped, followed by initiation of 'post MDA surveillance' and validation of interruption of transmission of infection. This is done by conducting three successful Transmission Assessment Surveys (TASs) within a span of 4-6 years among children born after initiation of MDA [10]. In the event of failure of first TAS in any Unit, two additional rounds of annual MDA would be conducted before subjecting it to first successful TAS [10].

### Mass Drugs Administration

In most situations, an IU corresponded to revenue district of the country. However in some areas, IU was part of district. The

population of IU also varied from <2000 (Madurai district in Tamil Nadu) to >10 millions (North 24 Parganas district in West Bengal) [5]. In case of Andaman & Nicobar Islands, three revenue districts scattered over hundreds of KM have been clubbed into one IU [5].

Albendazole was added in MDA with DEC during 2008 [1]. Over the years, number of IUs increased due to inclusion of a few new areas and bifurcation of some revenue districts to a total of 255 IUs [5]. These 255 IUs spreading over 16 States & 5 Union Territories have presently about 630 million population [5] (about 60% of country's population) at risk of developing LF.

MDA is a conglomeration of about 35 complex and sequential activities spreading over at least nine months each year [11]. Broadly MDA activities pertain to administrative, managerial, procurement, technical, logistic & supply chain management, quality control, training, IEC/BCC, operational and financial in nature with participation of community.

Between 2004 and 2015, there was an average annual population of about 550 million for MDA [5]. To administer drugs to people during MDA, one Drug Distributor for 250 populations (roughly 50 houses) and one Drug Supervisor for 10 Drug Distributors were provisioned by government of India [5].

### Failure Story

Constitution of IUs in a varied manner in terms of geographical spread, size and population was unusual from the beginning. This has hampered operational uniformity. There was a need to develop IU based monthly reporting system of different MDA related activities for continuous monitoring, but it was not there.

As per the scale, engagement of 2.2 million trained and dedicated Drug Distributors & 0.2 million Drug Supervisors, on an average during each MDA, were required. However, it has been a wishful thought always. And actual number engaged was far less. This was compensated by extending MDA for more days [5]. This extra effort never translated into fruit in reality and diluted the MDA.

Making drugs available at grassroots level in time along with required number of trained and motivated Drugs Distributors have been the weakest link in MDA. Moreover, contacting all family members of IUs during MDA and convincing all healthy eligible persons to take drugs of different size, shape and number was easier said than done. These two problems were perpetually present since 2004 and were never attended properly and addressed fully.

The IEC/BCC activities with social mobilization were done during all past rounds of MDA to the extent possible but could not yield required impact. 'Post MDA Surveillance' is non-existence in all those Units which have cleared first TAS in last 4 years. Thus in coming 2 to 3 years, many Units which cleared 1<sup>st</sup> TAS may fail in 2<sup>nd</sup> TAS in absence of Post MDA Surveillance [12] and following withdrawal of MDA.

On the top of everything, another about a dozen Units have failed in 1<sup>st</sup> TAS [5] during early 2016. Those Units, where MDA was stopped but failed in 1<sup>st</sup> TAS, now have to revert to two additional MDA rounds [10]. Many more are expected to be in the failure line. This TAS failure is an ominous sign with wider ramifications. No extra intelligence is required to understand the cause of TAS failure. Obviously not many people in those failed Units did take MDA drugs in past years. In absence of strict real time monitoring of blood collection and subsequent cross-checking of slides, quality of pre MDA micro-filaria survey was highly doubtful which could not detect the real situation.

As per WHO guidelines, 'Drugs Coverage' means 'Drugs Consumption'. But in India two separate terms are in use, 'Drug coverage' and 'Drug consumption' [13]. 'Coverage' means drugs distribution and 'consumption' mean drugs intake. This has led to a peculiar situation. The actual overall 'Drugs consumption' during past MDAs was around 20% to 30% as observed from 'programme impact' (only 55 out of 255 IUs have cleared first TAS after 9-10 rounds of MDA. But, all 255 were supposed to achieve this stage during 2009-2010 after 5-6 rounds of MDA). The claim of National Programme's regarding 80-90 per cent 'Drugs Coverage' [14] (not consumption) during 2004 to 2014 has given an unrealistic rosy picture which is not true.

There has been no system of generating IU based valid and reliable data on MDA drugs consumption in a vast and populous LF endemic country like India. Patchy and irregular data generated by Medical Colleges and Research Organizations were neither reliable nor valid [5].

Annual review of MDA at national level with endemic States & UTs was not practiced. This has deprived the programme from its annual assessment by expert group and left it clueless about poor impact of MDA. Reliability of programme data was not beyond doubt. As stated above, quality control of micro-filaria surveys was conspicuous by absence. About 14 known additional LF endemic areas have not been delineated and brought under MDA as yet. So India is yet to complete mapping of all endemic areas. If MDA is started in those areas another 12 to 15 annual rounds will be required at the present rate.

There was no periodic review of MDA and its impact. Independent Appraisal of the National Programme was done by Vector Control & Research Centre, Puducherry only once in 2014 (11 years after initiating MDA), but as the appraisal was done during inter-MDA period, the issue of drugs consumption could not be taken up. Moreover, the reports of appraisal have not been utilized in the programme as yet [5].

What is very surprising is the failure of Annual Regional Programme Review Group (RPRG) meeting of WHO (SEARO) to detect these deficiencies of Indian programme for too long a period. It is not understood as to what review the RPRG was doing so long?

## Present Status

Annual MDA in India, over the years, has become cosmetic and ritualistic in nature in absence of focused public health approach as stated above. In last 12 years after initiation of MDA India possibly achieved half of what it was to be achieved in five to six years.

As per records, 55 IUs have passed 1<sup>st</sup> TAS so far but do not have 'post MDA surveillance' in operation, 12 IUs have failed in 1<sup>st</sup> TAS, 55 IUs are waiting to undergo first TAS and rest 133 IUs are to continue with annual MDA [5].

It is found beyond doubt that India cannot do anything better to increase drugs consumption in future annual MDA. Introduction of Ivermectin in MDA (Triple Drugs MDA), as has been under consideration [5], will increase the complexity of MDA, confuse the community and may further reduce drugs consumption in 'Programme Mode' in future. So, it is impossible to foresee as to how many more annual MDA rounds will be needed in different IUs of India.

Thus India is in no position to achieve ELF by 2020. More serious public health approach with proactive mind-set during past MDAs would have saved India from this anticipated disgrace.

## Suggested Way Out

Universal use of DEC medicated salt in endemic districts/IUs to replace MDA is the need of the hour in Indian National Programme to shake up and accelerate the ELF [9] process. Use of DEC medicated salt is the other WHO approved strategy for ELF [9]. India had already done many field studies with DEC medicated salt and found all to be effective [15]. Use of DEC medicated salt at community level in endemic States will be safe, feasible and stable in field conditions [16]. Moreover this will be simple and cost effective [8] and scientifically valid approach. If all endemic States are covered under the use of DEC medicated Salt, then issue of left out LF endemic areas will be addressed too. Moreover it will spare the country from perpetually ill conceived, poorly conducted and maddening MDA with uncertain future.

India has also a long experience of using Iodized Salt at community level under IDD Control Programme [17]. This experience in IDD Programme can be of immense help to initiate use of DEC medicated salt in India and achieve ELF at an early date.

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