

## Comparison of coverage and compliance of mass drug administration 2017 in urban & rural areas of Valsad district, Gujarat, India

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### ABSTRACT

**Context:** Filariasis, an infectious tropical disease is a major public health problem in India but remains neglected. This study was conducted with an objective to evaluate and compare the coverage and compliance of Mass Drug Administration (MDA) and associated factors in Urban and Rural areas of Valsad district, Gujarat, India.

**Methods and materials:** This cross sectional study involved survey of Valsad district covering 128 household. A pretested questionnaire was used to collect data regarding administration of Diethyl Carbamazine (DEC) & Albendazole (ALB) to eligible population as a part of routine MDA activity. The data was analysed using Epi info software.

**Results:** The coverage of anti-filarial drug was 94.81% in urban & 100% in rural. The compliance rate, the effective coverage rates were 100% and Coverage Compliance Gap was zero in rural areas of district which were better than those in urban area of district.

**Conclusion:** The effective coverage rate after taking into account the coverage and compliance was more than the target of 85 percent which is needed for eradication and elimination of Filariasis. The rural areas of district had 100% effective coverage rate than urban areas of district. More emphasis must be given on spot consumption of the drug.

**Keywords:** Filaria, Mass Drug Administration, Coverage & Compliance.

### INTRODUCTION

Filariasis is a neglected public health problem in India and its prevalence is next only to malaria among various vector borne diseases.<sup>1,2</sup> In Gujarat state Valsad district is endemic for filariasis.<sup>1</sup> Our current strategy for control of filariasis is based on two key components: firstly, interrupting transmission through annual, mass drug administration (MDA) program implemented to

cover the entire at-risk population; secondly, alleviating the suffering caused by lymphatic filariasis (LF) through morbidity management and disability prevention.<sup>2</sup>

The National Health Policy 2017 aims at elimination of lymphatic filariasis by 2017.<sup>3</sup> through the strategy of annual MDA. In pursuance to achieve this, Government of India during 2004 initiated MDA with annual single dose of DEC tablets to all the population living at the risk of

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Filariasis.<sup>4</sup> MDA of DEC & Albendazole (ALB) was undertaken in Valsad district from 14<sup>th</sup> to 19 February 2017

The present study was undertaken to evaluate and compare the coverage compliance of MDA and factors associated with urban and rural areas of district Valsad of South Gujarat, India and to provide necessary recommendation based on the study findings.

## METHODOLOGY

This cross sectional study evaluates coverage and compliance of MDA programme undertaken in urban and rural areas of District Valsad from 14<sup>th</sup> to 19<sup>th</sup> February 2017. As a part of MDA activity house to house visits were made by Drug Distributors (DDs) and DEC & ALB was administered to the eligible population which excluded children under 2 years, pregnant women and severely ill person.<sup>7</sup> The DDs have been instructed to persuade the eligible population to consume tablets on the spot and avoid taking tablet empty stomach.<sup>7</sup> Evaluation of MDA was carried out by the help of faculties of Community Medicine department of our college two weeks after completion of the MDA activity by the district health care system and this activity was completed in fifteen days. The selection of the four clusters in Valsad district for the evaluation of the MDA program through household surveys was as per NVBDCP guidelines.<sup>7</sup> The "Z" Test (Test of proportion) applied to know the significant difference between proportions of two independent groups

**Selection of the Survey area:** Four clusters were randomly selected using random number table from urban and rural, for the post MDA survey. The survey was done two weeks after the MDA program activity. The coverage as reported by the health care system was used to select these four clusters. Selection of cluster was done as per the criteria given in NVBDCP guidelines.<sup>7</sup> A total of 32 households (HHs) in each cluster were selected in such a way that the entire ward/village was

represented. For this purpose, the area was divided into four quadrants, and in each quadrant, a central point was identified and the first house was selected randomly (any number between 1 and 9) and thereafter another seven Households (HHs) (total eight) serially (open with available family members) were covered. The exercise was repeated in other three quadrants. In fact this was an improvement over 30HHs suggested per cluster by NVBDCP for evaluation.

A total of 128 households from four clusters were selected. All data were collected by using pre-designed and structured questionnaire. One individual from each house, preferably head of the family was interviewed after obtaining informed consent. If the head of the family was not present the elder most individual of the household were interviewed. The data was compiled and analysed by using Microsoft excel and Epi info.

## RESULTS

A total 128 households from 4 clusters were surveyed for MDA, from both the urban and rural areas. A total of 536 individuals out of 540 individuals selected could be covered. The coverage i.e. the population to which the drug is imparted is >94% and 100% of the eligible population for the urban and rural Valsad district respectively. Similarly the compliance rate and the effective coverage were significantly higher ( $p < 0.05$ )(100%) in rural areas with a zero CCG (Table 1).

Among the various reasons of non-coverage of eligible population by DD, the chief reason was people were missed by the drug distributor teams. While the other common reason was unavailability of the households at the time of house visit by DDs, while in the rural areas of Valsad no case of non compliance was observed.

The main reason for non compliance in urban areas (50) was the forgetfulness and the fact that respondents did not want to take these drugs.

**Table 1. Comparison of Valsad Urban and Valsad Rural**

Variables	Valsad Urban	Valsad Rural	p-Value
Total no. of households	32	96	NA
Total population	135	405	NA
Eligible population	135(100%)	401(99.01)	NA
Coverage*	128 (94.81)	401(100)	<0.0001
Compliance#	123(96.09)	401(100)	<0.0001
Coverage Compliance Gap (CCG)	3.91	00.00	NA
Effective coverage rate\$	91.11%	100	<0.0001

\*- Out of total eligible population; #- Out of total coverage population;

\$(Compliant population/Eligible population) X 100

**Table 2. Various reasons of non coverage of eligible population by DDs in Urban & Rural Valsad**

Reasons	Urban (%) (N=7)	Rural (%) (N=0)
Team did not visit/ people missed by DD during visit	4(57.15)	-
Person not available at their residence during visit of DDs	3(42.85)	-

**Table 3. Reasons for non compliance in Urban and Rural Valsad**

Reasons	Urban (%) (N=4)	Rural (%) (N=0)
Forgot to take drugs after meal	02 (50)	-
Did not want to take drugs	02 (50)	-

## DISCUSSION

The concept of MDA is to approach every eligible

individual in the target community and administer annual single dose of anti-filarial drugs (DEC+ALB). This annual dose is to be repeated every year for a period of 5 years or more aiming at minimum 85 % actual drug compliance. A high coverage (> 85%) is essential to achieve the interruption of transmission and elimination of disease in India.<sup>7</sup>

In our study we found that coverage & effective coverage rate was excellent in rural Valsad than in urban Valsad, similar to a study done by Kumar et al in 2006 in Gujarat which had reported that the effective coverage was marginally better in rural areas than urban areas.<sup>5</sup> Similar findings as regards coverage and compliance rates have been reported from Tamil Nadu, Kerala and Andhra Pradesh.<sup>6, 8, 9</sup> The higher coverage in rural areas than urban areas is ascribable mainly to the fact that the DDs are familiar with the people in the rural areas and in urban areas the team either missed some people or some people though present are not given drugs by the DDs. Similar results were found in study conducted by Nirgude et al with forgetfulness on the part of person accounting for 19% on non-compliant population.<sup>9</sup> The other common reason was that the respondents did not want to take these drugs (50%).

In order to be successful this coverage should be 85 percent or above. When our system could reach to an eligible person and hand over to him the dose of the drug, the person has to consume the drug and preferably in front of the distributor. Kumar P et al reported that the DD hardly insisted on supervised “on the spot” administration of drug.<sup>5</sup> This gap can be minimized by educating and motivating the community for taking the drug. Very high or even universal coverage will be of no use if the compliance is poor. Compliance to MDA largely depends on the approach of the drug distributor in implementation of MDA as per guidelines.<sup>7</sup>

The fear of side-effects was not a significant factor for non-compliance. According to study by Nirgude et al most common cause of non



