

# Summary of the current situation of filariasis in Indonesia

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Lymphatic filariasis (LF) caused by three species, *Wuchereria bancrofti*, *Brugia malayi* and *Brugia timori*, is still a major public health problem in Indonesia. In 2009, it was estimated that there are more than 125 million people are at risk of LF infection living in 337 endemic districts, but only 11,914 reported chronic cases have been reported. Based on the mapping data, the overall prevalence of LF in the endemic districts is ranging from 1%-39% and almost all islands are endemic.<sup>1</sup>

Table 1. Prevalence of Lymphatic Filariasis in Indonesia based on the data from 2000-2009.

	Island	Mf rate (%)	No. of districts
1	Sumatera	1 – 18.5	139
2	Kalimantan	1 – 26	55
3	Java	1 – 9.2	32
4	Sulawesi	1 – 28.21	37
5	Maluku+Papua+West Papua+Nusa Tenggara (NTT+NTB) +North Maluku	1.14 – 38.57	74

In 2002, the Minister of Health declared the Indonesian participation on LF elimination program based on WHO guideline in Banyuasin, South Sumatera. The government used subdistricts as Implementation Unit (IU) when the program started. However, in 2005, the District Health office has been appointed as IU the LF elimination program. In the program, mass drug administration of DEC 6mg/kg BW-albendazole 400 mg is provided to the entire population of endemic areas (LF [ICT or MF]  $\geq$  1%) except for children under 2 years old, pregnant women, people with serious diseases, children with severe malnutrition  $\geq$  1%.

Six endemic areas including Alor island were signed as pilot study areas for MDA before the program is widely implemented to all endemic areas in Indonesia. Hospital based trial was done in District hospital in Alor. The study was to evaluate the efficacy and safety of combination DEC-Albendazole treatment on *B. timori* and *W. bancrofti* positive persons as well as the train the local doctors how to manage the adverse reactions. The result of the study showed that the treatment is safe and can be administered to the population.<sup>2</sup>

Based on the LF study in Alor, the dosage of DEC used in mass drug administration was modified from body weight-based to age-based in order to make the drug distribution easier (Table 2). This modification was accepted by the Ministry of Health in Indonesia.<sup>3</sup>

The pilot study on MDA in Alor showed that the prevalence of mf can dropped rapidly following 2 rounds of MDA, from 26.8% to 3.8%.<sup>3</sup> The mf rate was continuing to decrease till less than 1% after 6 rounds of MDA.

The government has determined LF elimination program as one of national priorities which it is in line with Presidential Decree number 7, 2005 about the National Medium Term Development Plan 2004 – 2009. In addition a Minister of Internal Affairs Decree was enacted the guideline to implement MDA in Indonesia (guideline in Bahasa Indonesia). It is expected that the central government, as well as province and district government are committed to ensure program implementation

Table 2. The dosage of DEC plus albendazole used in Filariasis elimination program in Alor island.

Age	Dosage of DEC*	Dosage of Albendazole**
2 – 6 years (Pre-school)	1 tablet	1 tablet
7 – 12 years (Primary school)	2 tablets	1 tablet
13 – adult (High school +)	3 tablets	1 tablet

\* 1 tablet of DEC is 100mg, \*\* 1 tablet of albendazole is 400mg

Due to decentralization reform, the District government is encouraged to utilize own resources and own budget including operational budget for MDA. Therefore, advocacy to Provinces and Districts will be an important role in LF elimination program. They have to understand the program, budget requirements, and budget availability. In fact, limited resources and low commitment of the local authorities are found in many regions resulting in unsuccessful LF program achievement.

In order to accelerate the LF elimination program in Indonesia, the Subdirector of Filariasis and Schistosomiasis, Directorate of Vector Borne Disease Control, Ministry of Health Republic of Indonesia, has developed strategic plans for 5 years including to enhance the advocacy and the role of District head, to ensure the availability of drug and MDA implementation, and to improve monitoring and evaluation of MDA (Table 3).<sup>1</sup> With the new strategic plans, the LF elimination program is able to cover all the endemic areas before the year 2020.

In order to identify areas (*Brugia*, *W. bancrofti*) with MF rates higher than 10% suitable for the DOLF project it was necessary to perform detailed mapping surveys, because the available data were not sufficient to identify study villages. Surveys were performed in 5 Districts on 3 islands: Central Java - Pekalongan District (*Culex* transmitted *W. bancrofti* Mf rate up to 5%, some previous MDA); Flores - Sikka District (*B. timori* Mf rate up to 15 %, little *W. bancrofti*), Flores Timur District (*W. Bancrofti* Mf rate up to 10%, little *B. timori*), Lembata District (*W. bancrofti*); Papua - Keerom District (*W. bancrofti*, remote forest villages up to 60%, unsuccessful MDA program, unsecure area –separatists).

Table 3. District MDA Coverage Plan in 2010-2014

No	Island	Number of district implemented MDA										Total until 2014	
		2010		2011		2012		2013		2014			
		Ip MDA	Done MDA	Ip MDA	Done MDA	Ip MDA	Done MDA	Ip MDA	Done MDA	Ip MDA	Done MDA	Ip & done MDA	Not done MDA
1	Sumatera	31	8	35	3	41	3	47	2	52	2	70	69
2	Kalimantan	18	1	18	-	20	3	23	3	25	-	32	23
3	Jawa	17	-	17	-	18	-	20	4	21	2	27	5
4	Sulawesi	17	1	17	1	13	7	13	3	17	1	30	7
5	NTB&NTT	5	1	5	1	8	-	12	-	19	-	21	0
6	Maluku	2	-	4	-	4	-	7	1	14	1	16	2
7	Papua	14	-	19	1	21	2	25	1	31	-	35	0
Total		104	11	115	6	125	15	147	14	179	6	231	106

Ip MDA: Implemented MDA, Done MDA for 5 years

#### References:

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3. Oqueka T, Supali T, Ismid IS, Purnomo, Rückert P, Bradley M, Fischer P. Impact of two rounds of mass drug administration using diethylcarbamazine combined with albendazole on the prevalence of *Brugia timori* and of intestinal helminths on Alor Island, Indonesia. *Filaria J*. 2005 Jul 13;4:5.