



Transmission Assessment Survey (TAS) in Lymphatic Filariasis

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Background

- Lymphatic Filariasis is endemic in 52 countries and 886 million people requiring preventive chemotherapy
- In 2000, 120 million people were infected and 40 million disfigured (25 million men with hydrocele and 15 million people with lymphoedema)
- Regarding World Health Assembly resolution "WHA 50.29", member states were fostered to eliminate LF as a public health problem
- Global Programme to Eliminate Lymphatic Filariasis (GPELF) launched by WHO in 2000 and roadmap was reconfirmed the target date for worldwide LF elimination by 2020

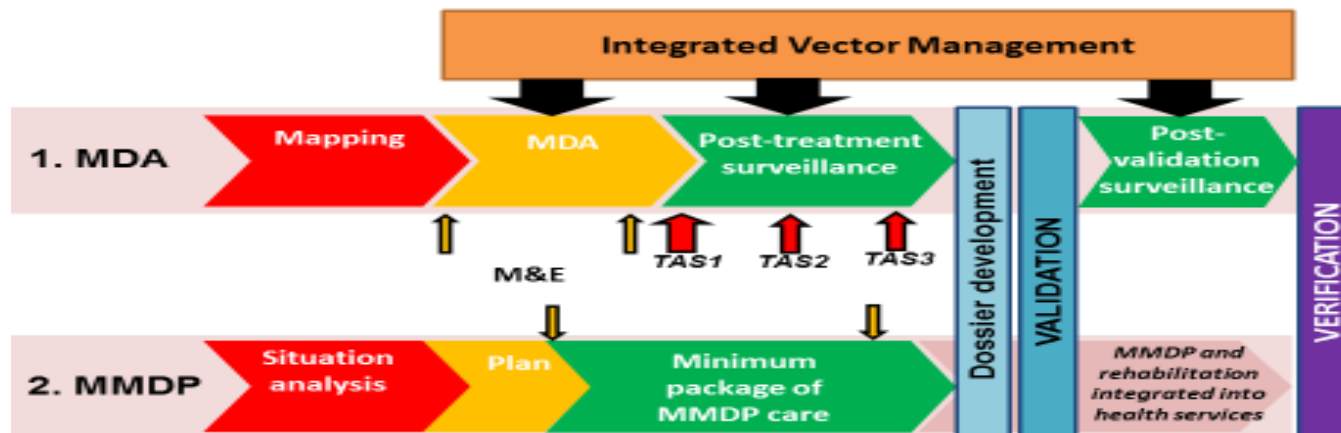
LF situation in Myanmar

- Myanmar is one of the most endemic countries in South-East Asia Region, with a high Lymphatic Filariasis prevalence rate.
- LF is one of the public health problems in Myanmar mostly prevalent in central part and coastal regions.
- an estimated 41 million people (~ 80% of total population) to be at risk of infection in 45 districts in 12 States and Regions

- The parasite *Wuchereria bancrofti* is the sole documented cause of LF in Myanmar, where it is transmitted by the mosquito *Culex quinquefasciatus*.
- In accordance with Global Program for Elimination of Lymphatic Filariasis, as many other countries Myanmar also launched a National Programme to Eliminate Lymphatic Filariasis (NPELF) in 2001.

WHO's strategy for ELF

- WHO's strategy has two components:
 - Stopping the spread of infection through mass drug administration (MDA) of all eligible people in LF endemic area or region
 - Alleviating the suffering caused by LF through provision of recommended basic package of care (Morbidity management and disability prevention – MMDP)

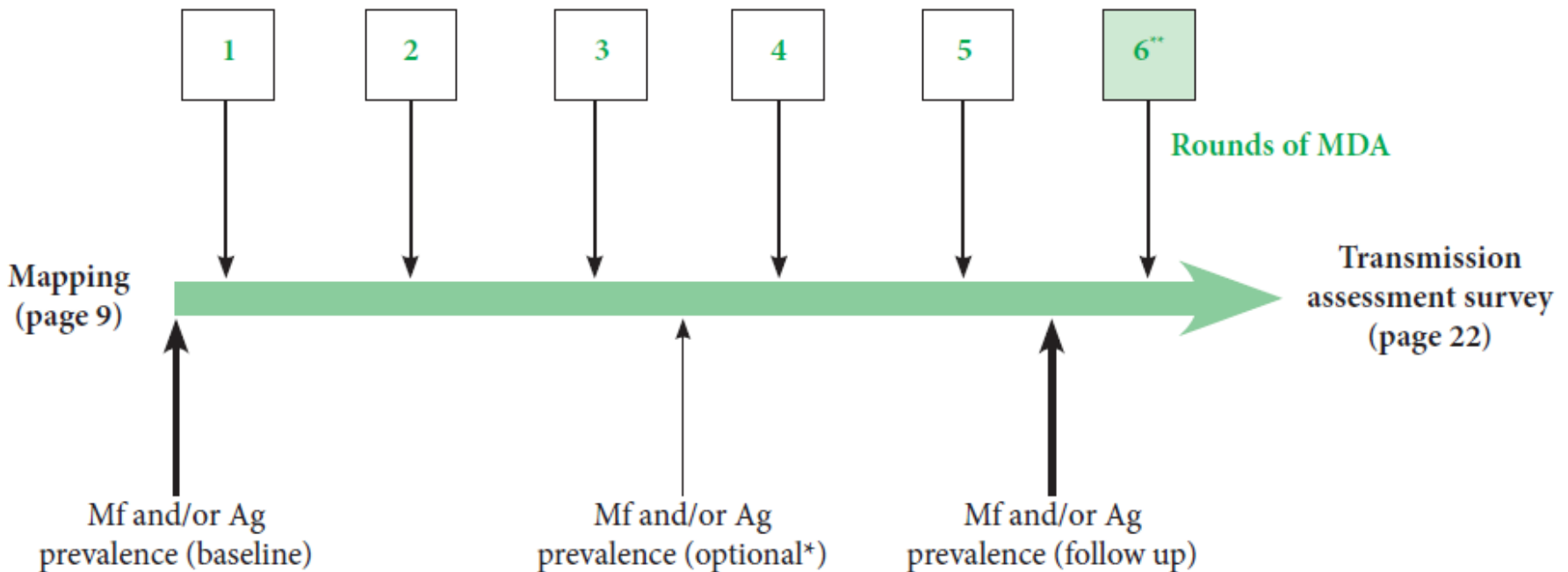


WHO Four Programmatic Steps for Interruption of LF Transmission

- Mapping
- MDA– three approaches to assess the intervention
 - ✓ Coverage survey after at least one round of MDA
 - ✓ Assessment of sentinel and spot-check sites before first MDA, before fourth MDA (optional), before sixth MDA to decide effectiveness of MDA
 - ✓ Transmission Assessment Survey (TAS) after the sixth MDA to determine if the infection level reduced to a point where transmission is no longer sustainable
- Post MDA Surveillance
- Verification

Timing of sentinel and spot check site assessments

Figure 2. Timing of sentinel and spot-check site assessments in national programmes



Mf = microfilaraemia; Ag = antigenaemia; measured by ICT; * Could be replaced by effective annual monitoring of coverage; ** Likely, but not necessary, to be conducted no matter assessment results.

MDA implementation in Myanmar (2001 – 2018)

State/ Region	Population: Coverage (Millions)																		
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Magway	1.8	3.5	3.6	3.7	Missed round	3.8	3.9	Missed round	4.2	3.4	3.98	3.97	3.48	3.6	3.7	2.99	3.06	3.06	
Sagaing		4.1	4.2	4.4		4.2	4.3		3.4	3.22	3.33	3.17	2.73	2.96	2.7	3.28	3.21	3.2	
Rakhine				2.8		2.8	2.9		3.30	3.41	3.2						-	-	1.45
Chin (Paletwa)				0.08		0.08	0.08		0.08	0.09	0.09	0.10			0.09	0.1	0.09	0.89	0.09
Mandalay				6.7			7.2		6.67	6.45	5.65	4.9	5.2	5.3	5.63	5.39	5.39		
Naypyitaw						0.8						0.8	0.9						
Ayeyarwady														5.3	5.3	5.4	5.79	5.68	5.67
Bago														4.3	4.3	4.4	4.43	4.66	4.66
Kayin														0.9	1.0	1	1.28	1.31	1.31
Mon														1.6	1.7	1.8	1.91	1.89	1.89
Tanintharyi														1.1	1.1	1.2	1.35	1.28	1.27
Yangon														7.1	7.2	7.3	5.12	5.35	5.34
Kachin																R/ND			
Total Pop	1.8	7.6	7.8	17.68			10.88		18.38		17.65	10.12	17.05	12.89	32.2	31.3	33.8	31.9	31.94
Total IU	2	8	8	20		13	20		20	13	20	16	35	36	36	34	33	34	
1 District = IU	Stopped in 3 IU of Sagging , 1 IU in Magway and 2 IU in Mandalay																		

MDA

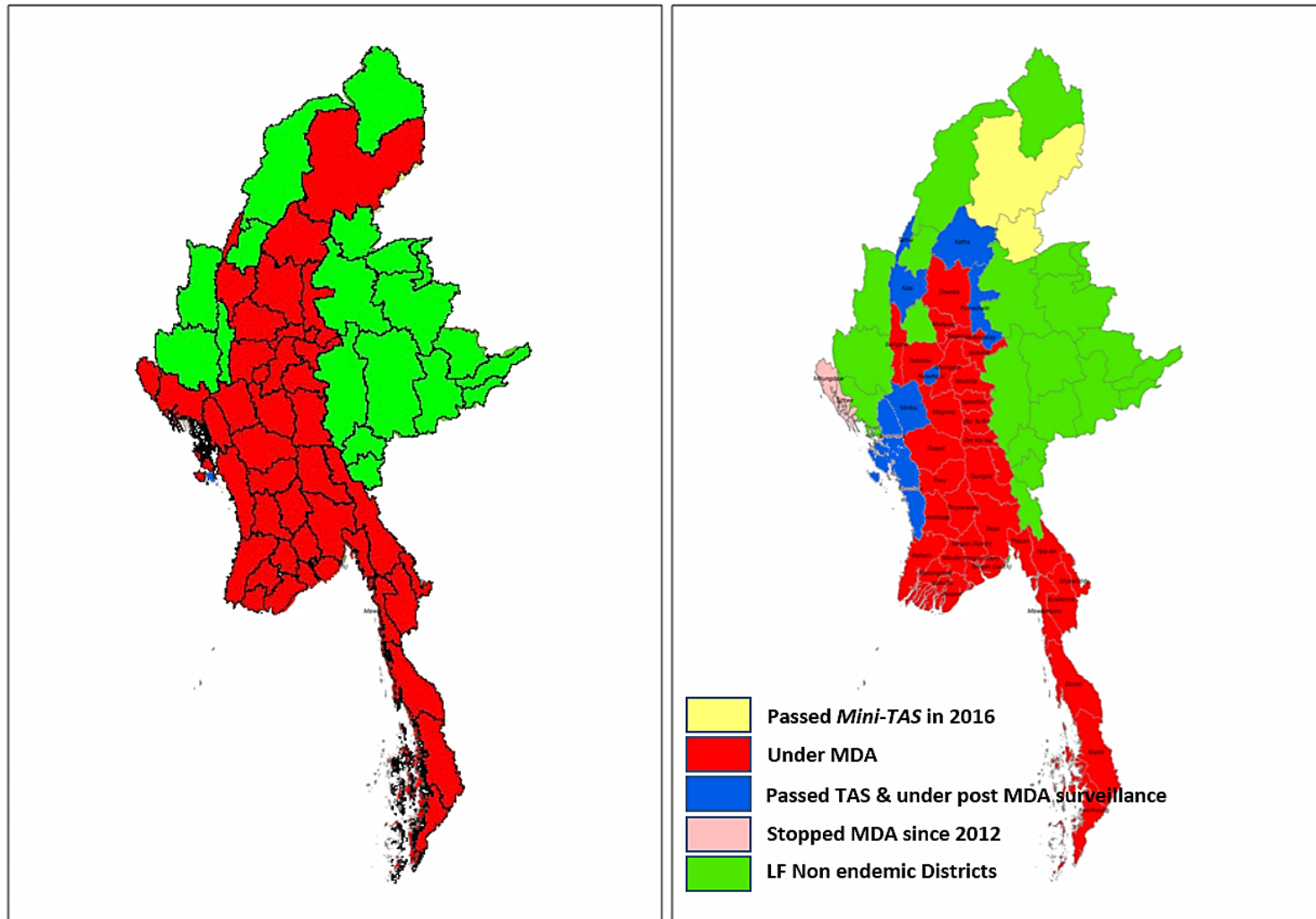
- Starting from 2001, MDA was conducted in Magway regions and gradually expanded to all endemic areas
- From 2001 to 2017, Myanmar has covered 43 districts already at least 5 rounds of MDA
- Two districts in Kachin State mapped as endemic but have not started MDA so far.
- To confirm this and take a final decision a survey based on the mini Transmission Assessment Survey protocol has been planned to be conducted in 2016.
- Recent sentinel surveillance data indicates that the prevalence in these districts is very low and may not require MDA.

TAS already passed districts by year

- 10 districts has already passed TAS and successfully stop MDA

State/Region	Districts	TAS passed year
<i>Sagaing</i>	Kalay,Tamu,Katha	2012
<i>Mandalay</i>	Pyin Oo Lwin, Nyaung-U	2014
<i>Magway</i>	Minbu	2016
<i>Kachin</i>	Myit Kyi Na, Bamaw	2016
<i>Rakhine</i>	Kyauk Phyu, Thandwe	2017

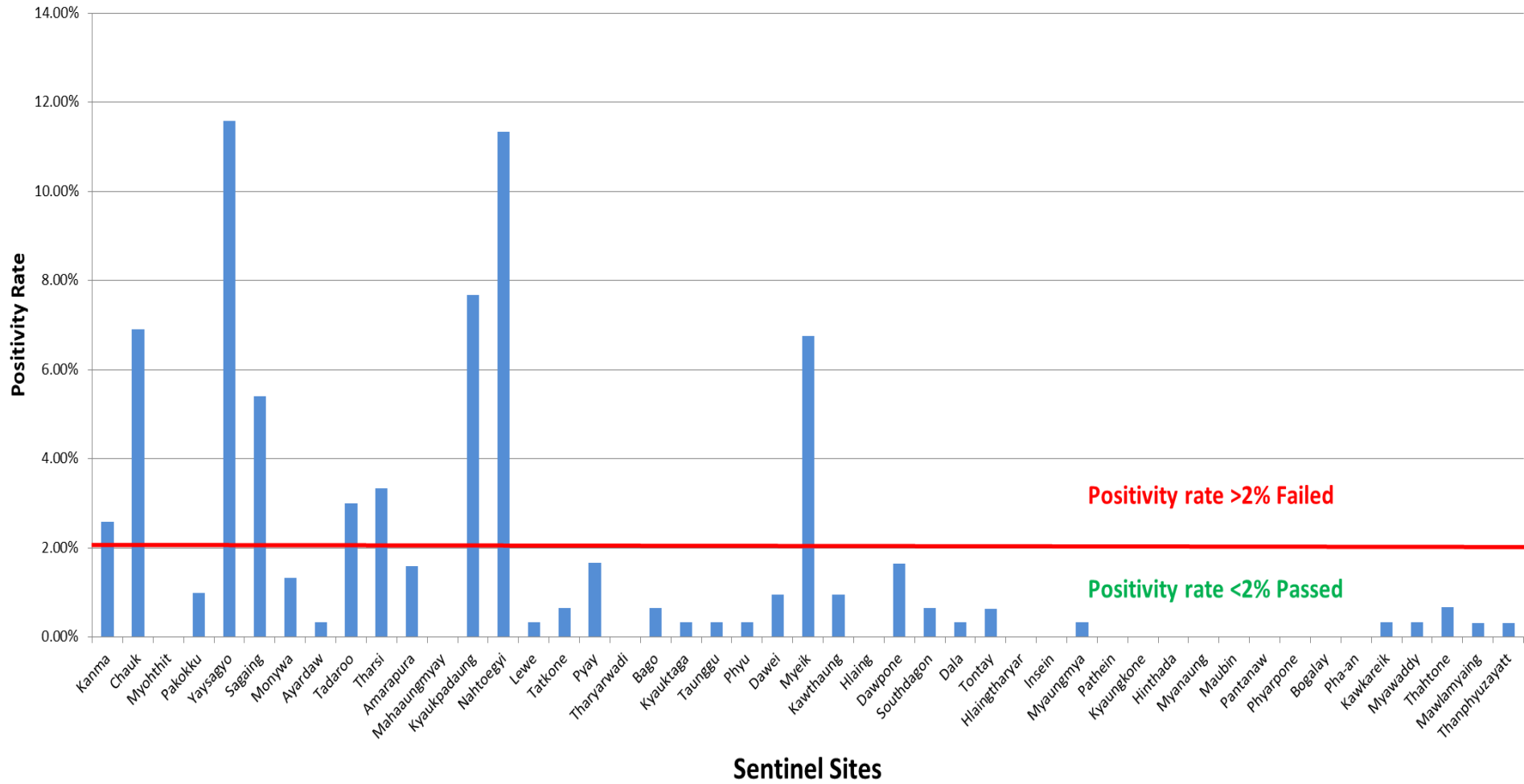
Figure – Comparison of endemic status of Lymphatic Filariasis in Myanmar (2001 vs 2017)



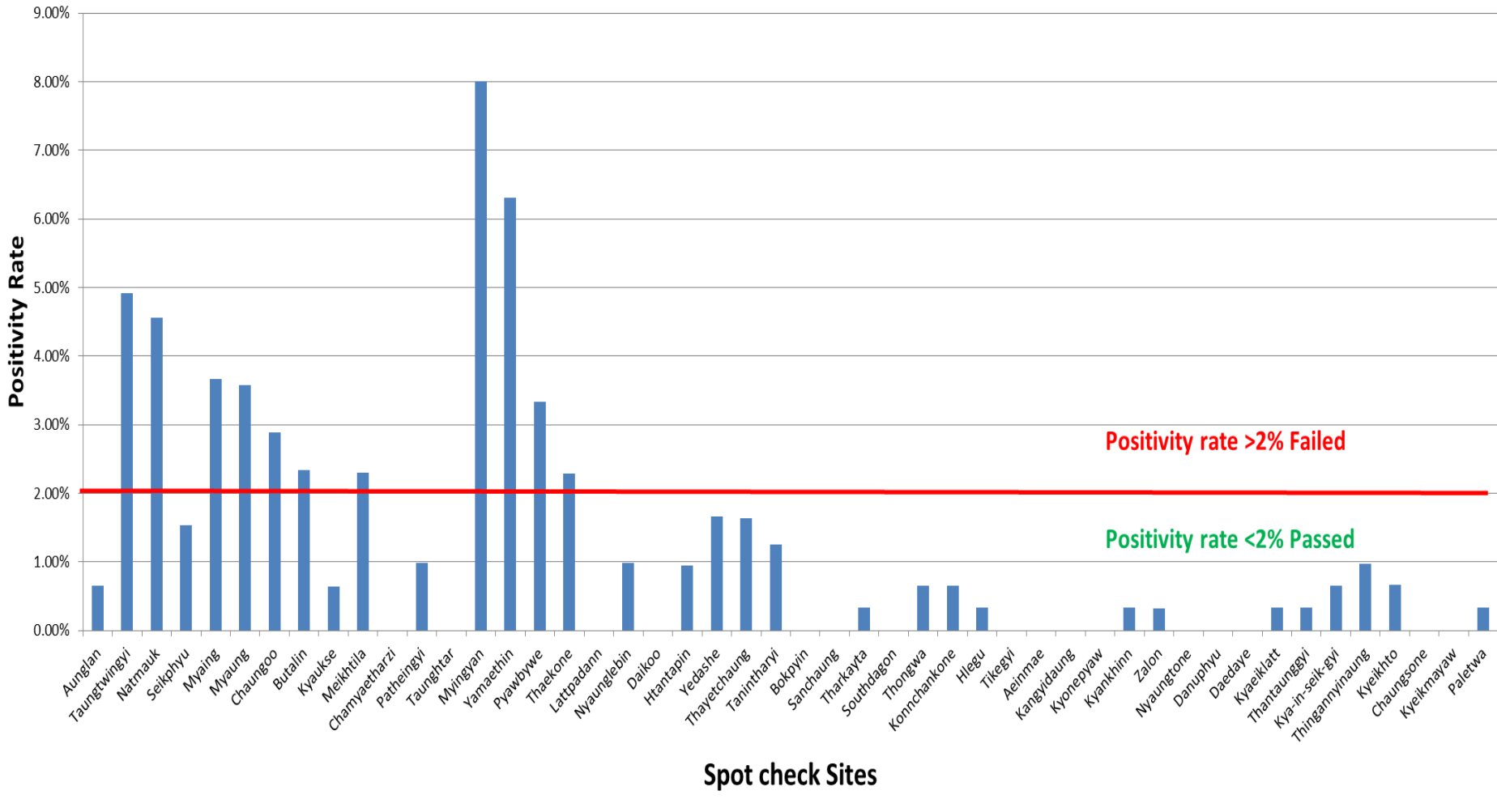
Pre Transmission Assessment Survey (Pre TAS) in 2018

- All endemic districts completed at least 5 rounds of MDA in 2017
- Pre TAS in 32 districts (Total 95 sites, 47 Sentinel & 48 Spot-check sites) were conducted in November 2018
- At least 300 people of aged >5 years were tested in **each** sentinel and spot-check sites with Filaria Test Strips(FTS)
- 21 districts "passed"(i.e., Antigenaemia <2%), 11 districts "failed" (i.e., Antigenaemia >2%)

Pre TAS Sentinel Sites result



Pre TAS Spot check Sites result



TAS in 2019

- National program is going to conduct the TAS 6 months after the last MDA in 29 endemic districts in 2019 (TAS 1,2 &3)
- In assessment plan, FTS will be used to detect the filaria antigen of *Wuchereria bancrofti*.
- All FTS positive will be confirmed by repeated test and Night Blood Survey will be followed for those with confirm positive test.
- School children aged 6-7 years should surveyed because they should be protected from LF infection if MDAs has been successful in transmission interruption
- '*The Survey sample builder*' tool can be used for "sample size calculation" and "critical cuff-off value"

Algorithm for TAS

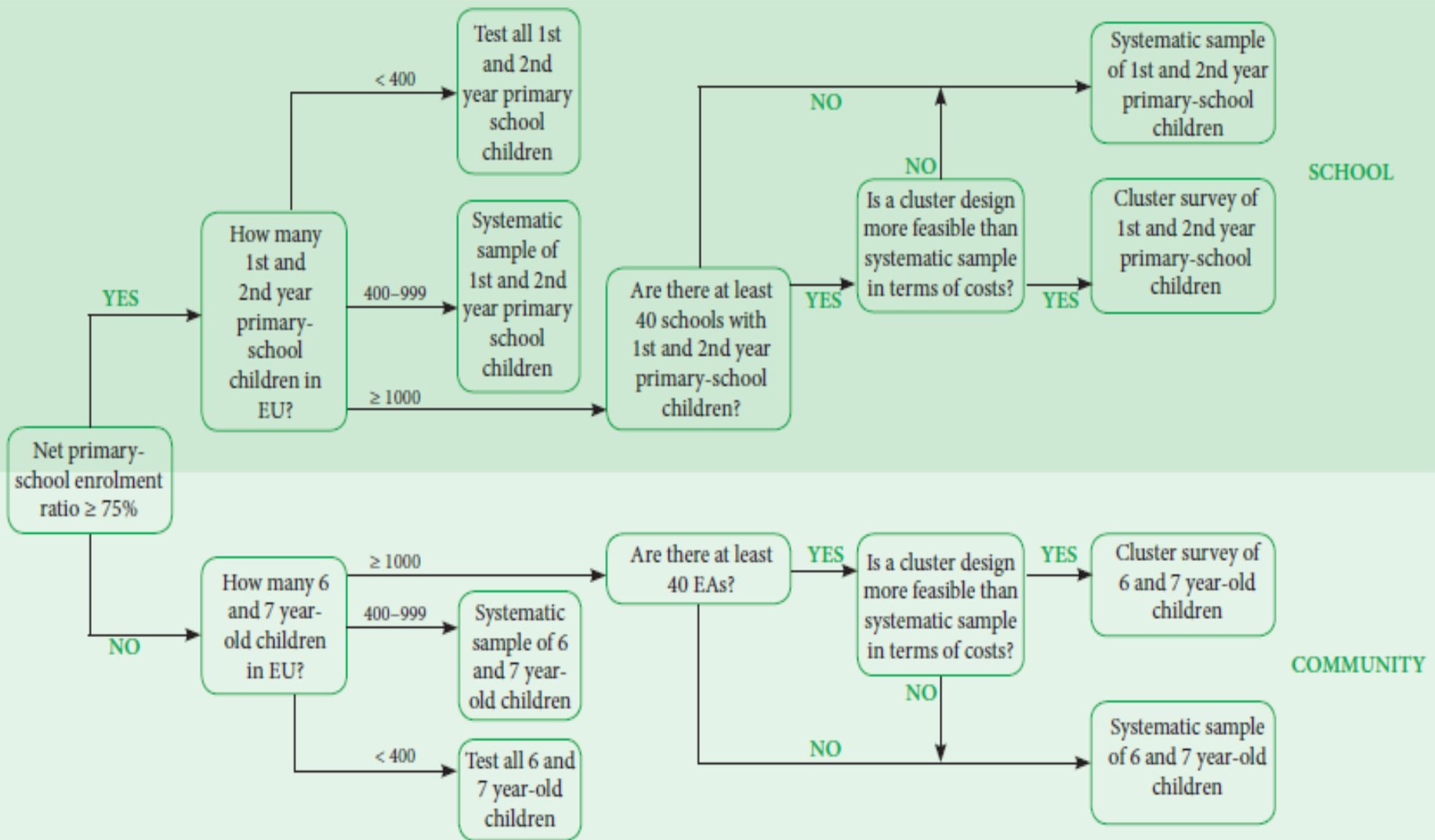


Table showing districts with type of TAS to be conducted in 2019

State/Region	Districts	Status		Type of TAS to be done in 2019
		Type of TAS passed	Year of TAS passed	
Chin	Paletwa	Pre-TAS	2018	TAS1
Bago	Bago	Pre-TAS	2018	TAS1
	Taunggu	Pre-TAS	2018	TAS1
	Thayarwaddy	Pre-TAS	2018	TAS1
Tanintharyi	Dawei	Pre-TAS	2018	TAS1
	Kawthaung	Pre-TAS	2018	TAS1
Yangon	East	Pre-TAS	2018	TAS1
		Pre-TAS	2018	TAS1
	West	Pre-TAS	2018	TAS1
	South	Pre-TAS	2018	TAS1
	North	Pre-TAS	2018	TAS1
		Pre-TAS	2018	TAS1
Ayarwaddy	Patheingyi	Pre-TAS	2018	TAS1
	Hinthada	Pre-TAS	2018	TAS1
	Myaungmya	Pre-TAS	2018	TAS1
	Maubin	Pre-TAS	2018	TAS1
	Phyarpon	Pre-TAS	2018	TAS1
Kayin	Paan	Pre-TAS	2018	TAS1
	Kawkareik	Pre-TAS	2018	TAS1
	Myawaddy	Pre-TAS	2018	TAS1
Mon	Mawlamyaing	Pre-TAS	2018	TAS1
	Thaton	Pre-TAS	2018	TAS1
Magway	Minbu	TAS1	2016	TAS2
Sagaing	Katha	TAS2	2012	TAS3
	Kalay	TAS2	2012	TAS3
	Tamu	TAS2	2012	TAS3
	Shwe Bo	TAS1 failed	2016	Pre-TAS
Mandalay	Pyin Oo Lwin	TAS1	2014	TAS2
	Nyaung Oo	TAS1	2015	TAS2
	Mandalay	Pre-TAS	2018	TAS1
Rakhine	Kyaukse	TAS1	2017	TAS2
	Thandwe	TAS1	2017	TAS2

Why TAS is important to conduct?

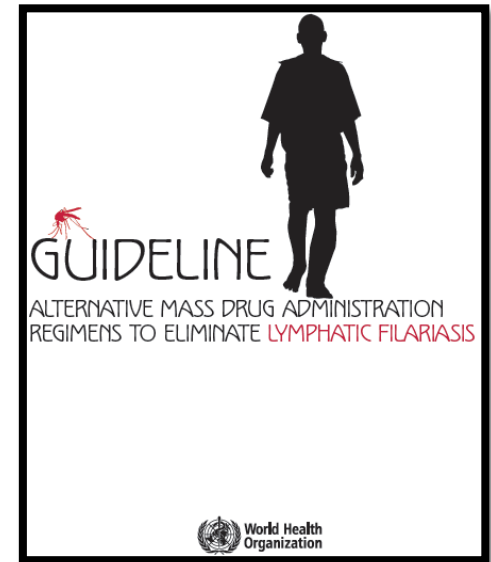
- Evaluation is necessary to determine whether the programme achieved its objective
- TAS are designed to support the programme determine whether endemic areas have reached the critical threshold of infection
- While the TAS provides helpful evidence to national programmes regarding the decision to stop MDA

Way forward

- ?use IDA (Ivermectin, DEC and Albendazole) in future
- ?Implementation Research- improving MDA, community compliance

Opportunity to accelerate ELF

- New WHO guideline for LF MDA (in countries currently using DEC + ALB) published in 2017
- WHO recommends annual IVER + DEC + ALB (**IDA**) :
 - for IUs with fewer than 4 effective rounds and...
 - for IUs not passing pre-TAS or TAS and...
 - for communities where post-MDA or post-validation surveillance suggests local transmission
- WHO recommends annual DEC+ALB in all other settings



Issues and challenges

- Inadequate funding for Pre-TAS and TAS. All support is being provided by WHO (annual Flexible funds and additional resource mobilization by WHO Country Office)
- Leveraging resources for capacity building, monitoring and supervision for NTDs including LF

THANK YOU