

Lymphatic Filariasis in Pahang, Malaysia: Distribution of Cases and Strategy Towards Elimination

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INTRODUCTION

Lymphatic filariasis is caused by three species of parasitic worms, namely, *Wuchereria bancrofti*, *Brugia malayi*, and *Brugia timori*, which are transmitted by mosquitoes. Globally, over 120 million people were infected in 2000 and as of 2018, 51 million people were infected, a 74% declined since the start of WHO's Global Program to eliminate filariasis in 2000. In response, WHO launched the Global Program to Eliminate Lymphatic Filariasis (GPELF) in 2000 with two main objectives, to interrupt the transmission of LF as well as to alleviate suffering and decrease the disability caused by LF. In Malaysia, LF is caused by *W.bancrofti* and *B.malayi*, and is transmitted by mosquitoes of the genus *Anopheles* and *Mansonia*. It occurs only in very small pockets in Malaysia: Sabah, Sarawak, and several states of the Peninsular Malaysia including Terengganu, Kelantan, Pahang, Selangor, and Johor. MDA was introduced with DA medication in 2004 and then with IDA in 2019 with aims to reduce the parasite reservoir and prevent further transmission. In 2017, a three-drug regimen comprising Ivermectin, Diethylcarbamazine and Albendazole (IDA) was introduced by WHO as an alternative MDA regimen to accelerate the LF elimination program and Malaysia started this regime in 2019, as well as in Pahang, specifically in Rompin and Pekan district. Malaysia plan for elimination by year 2025.

OBJECTIVE

This study aims to show Pahang State Health Department efforts and strategies towards Lymphatic Filariasis Elimination Program (LFEP)

METHODOLOGY

This study was conducted using secondary data from Vector Control Unit, Pahang State Health Department, from year 2004 to 2022 by monitoring number of cases from all documents through Vekpro website and weekly epidemiology meeting review of cases in Pahang. Mapping to classify endemicity was done in 2002-2004. Detection of cases was done using Night Blood Survey (NBS) and *Brugia* Rapid Test Kit (BRT). Transmission Assessment Survey (TAS) has been done from 2012-2018 to determine whether a specific area has achieved the desired level of transmission interruption.

RESULTS



Figure 1: Pahang map according to endemicity after re-mapping in 2004

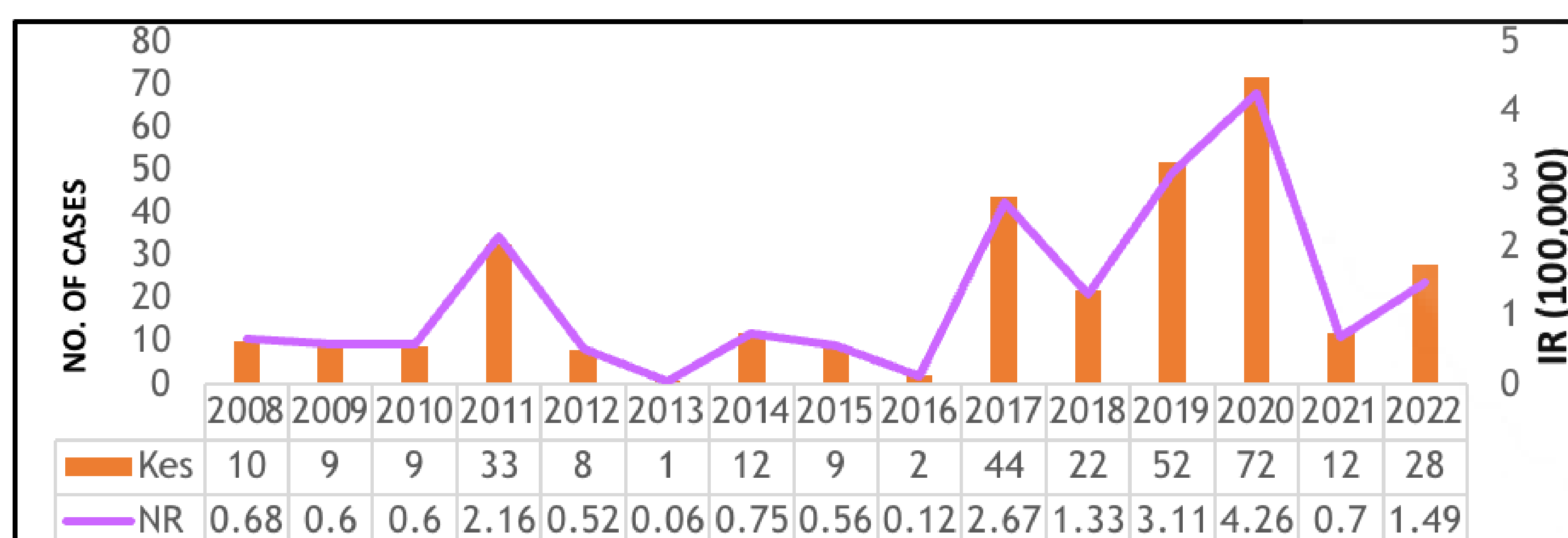


Figure 2: Number of Cases and Incidence rate of Filariasis in Pahang from 2008-2022

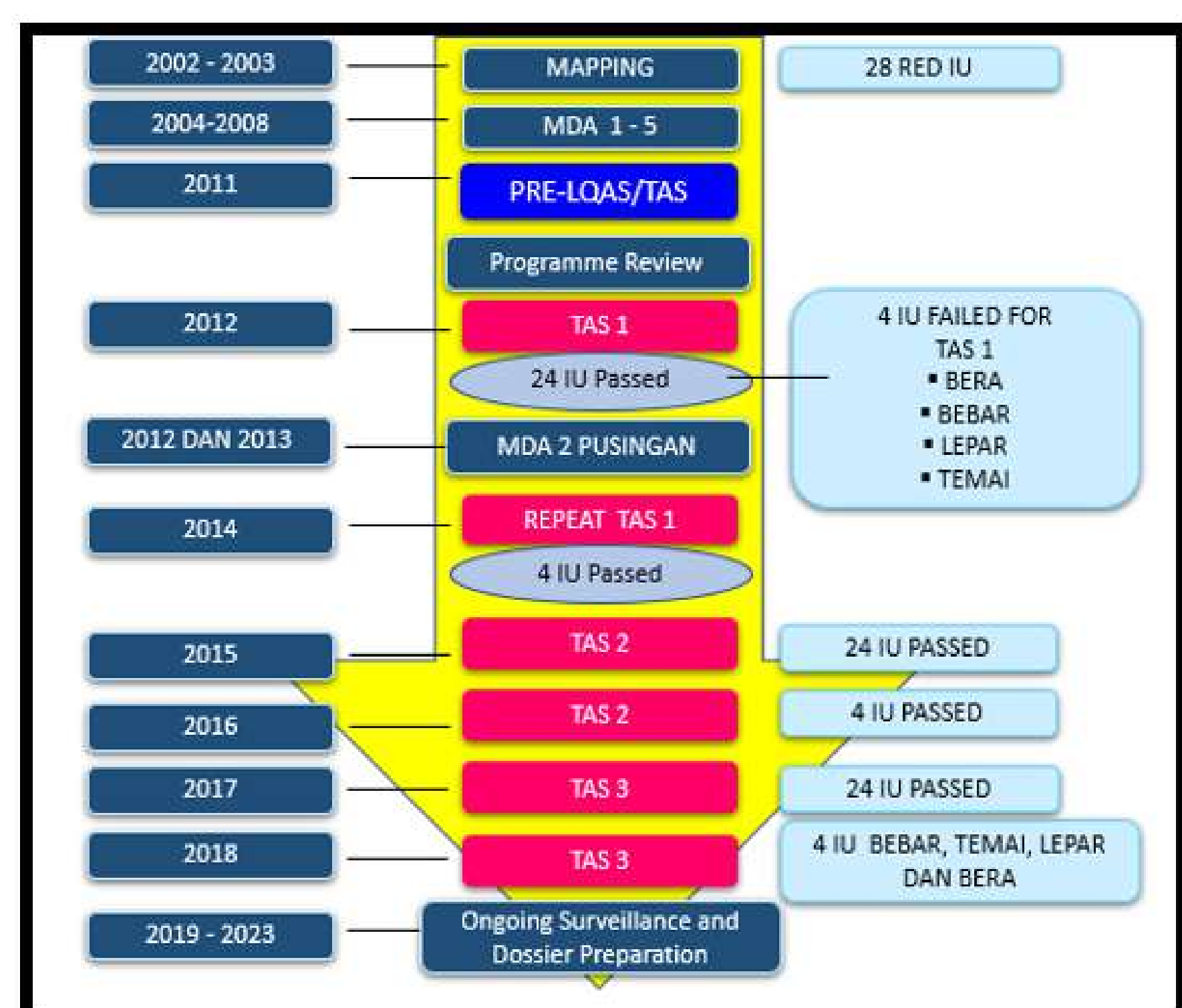


Figure 3: Pahang Lymphatic Filariasis Elimination Program Milestone

DISCUSSION

- From total of 74 Implementation Unit (IU) in Pahang, 28 IU's were identified as red areas and remaining 46 IU's as green or non-endemic areas (Figure 1). All 28 red IU's has undergone MDA 5 cycles from 2004-2008 using DA medication, as part of disease control and to reduce prevalence of disease, which was successful as IR achieved less than 1.0 (per 100,000) post MDA (Figure 2).
- Introduction of MDA using Ivermectin (IDA) medication in 2019 has been successful in reducing the IR of disease in Pahang (Figure 2).
- All 28 red IU passed 3 cycle of TAS from 2012-2018, which shows antigenemia rate falls below the predefined threshold and indicates that the transmission of LF has been successfully interrupted, and MDA can be stopped in that area (Figure 3).
- Surveillance activities are still actively carried out in the state of Pahang despite having achieved the elimination status of filariasis after passing the third TAS in 2018 (Figure 2,3). This surveillance includes at-risk groups and localities in the state of Pahang.
- Figure 2 shows from year 2008 until 2022, there's a total of 323 positive Filariasis cases in Pahang, with 73.3% (237 cases) from *Brugia Malayi* species and remaining 26.7% (86 cases) parasite *Wuchereria Bancrofti*.
- Overall, detection of positive cases using NBS comprises of 57.9% (187 cases) while using BRT 30.7% (99 cases) and detection using both NBS and BRT 11.5% (37 cases).
- Majority of positive cases came from Pekan, Rompin and Lipis district whereby local transmission mostly from 'Orang Asli' village and imported transmission from employer originate from India, specifically from Uttar Pradesh.

CONCLUSION

Efforts to combat filariasis have been ongoing in Pahang and MDA has been the cornerstone of these control efforts. Several challenges persist in the fight against Filariasis in Pahang, especially impact of foreign workers from filariasis endemic countries that came to work in Pahang. Continued research, improved and targeted surveillance, and also comprehensive control strategies are necessary to eliminate this debilitating disease. Despite all the challenges, efforts towards achieving filariasis elimination in Pahang is on the right track by 2025.

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