



Partnership To End Malaria





Partnership To End Malaria

3-5 February 2020

15th VCWG Meeting

Rational deployment of vector control interventions and impact of IRS on malaria incidence and entomological indicators. Result from descriptive analysis of routine health facility and entomological data

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Malaria Burden in Malawi

- Malaria remains a public health problem in Malawi
- Prevalence of malaria is at 24%
- 30% of all outpatient visits and 34% of all hospitalization are due to malaria.
- Currently, malaria incidence is at 191/1000 population against an Malaria Strategic Plan (MSP) target of 193/1000 population in 2022 and mortality rate is at 8.4/100 000 population against an MSP target of 12/100 000 population by 2022.

Vector control interventions in Malawi

- Long Lasting Insecticide-treated Nets (LLINs)
- Indoor Residual Spraying (IRS)
- Larval Source Management (LSM)

Long lasting insecticidal Nets

- Use of LLINs is the primary vector control intervention in the country
- Malawi aims to reach and sustain LLINs universal coverage of the population - one net for every 2 persons
- In 2018, LLINs mass distribution campaign was conducted
 - About 11 million nets were distributed
- 9 million were standard nets while 2 million were PBO nets.

Deployment of vector control interventions

- Mass campaign was done from October to November, 2018
- Districts with high malaria transmission and increased pyrethroid resistance e.g. Salima received PBO nets, the rest received standard nets.
- Nkhata-Bay (one of high transmission districts) received standard nets because it was initially anticipated that PMI would expand IRS to this district.
- IRS in Malawi has mainly been conducted in Nkhotakota district (2007 - 2012). Due to high mosquito resistance to pyrethroids, it was recommended that organophosphates be used from 2012 onwards. The high cost of organophosphates halted the program. IRS resumed in 2018 to date under VectorLink project in this district.

Methodology

Entomological data

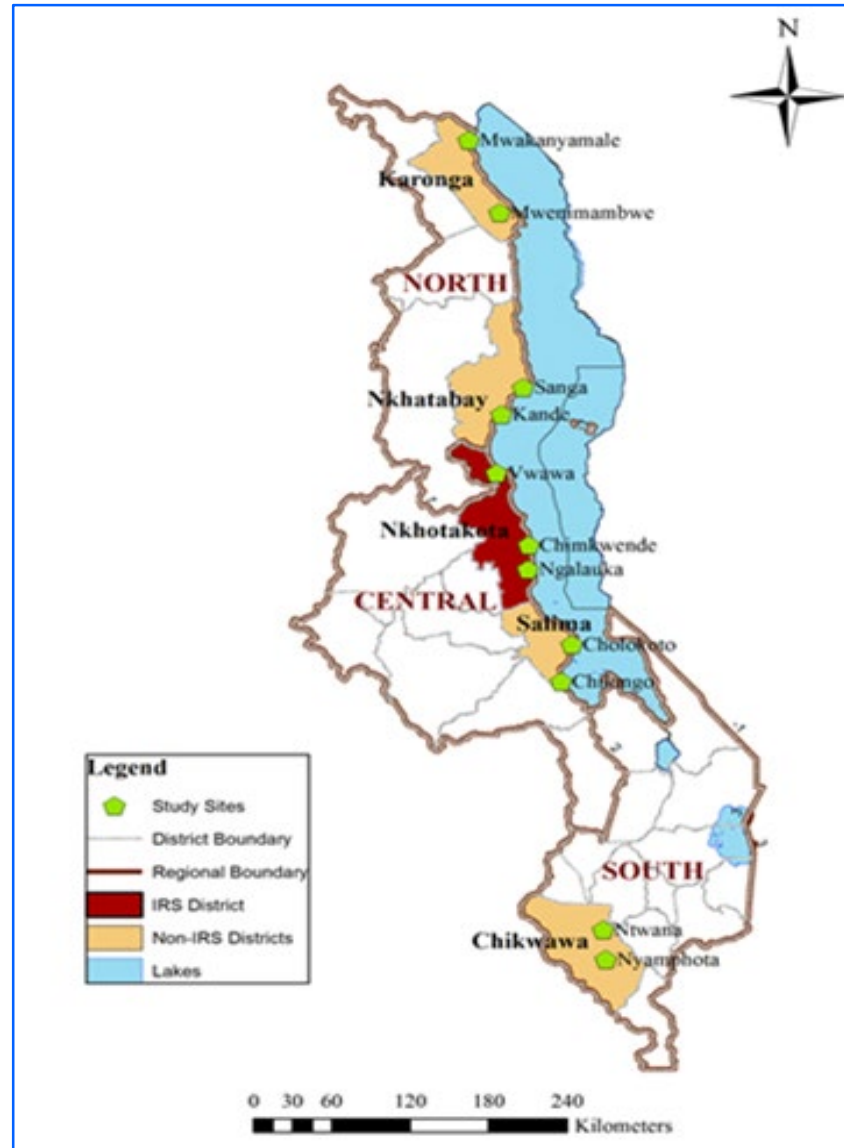
- Mosquitoes were collected before IRS intervention (July-September 2018) and after spray (October – June 2019) in Nkhotakota (IRS district) with 3 sentinel sites and Non IRS districts of Nkhata-Bay (2 sentinel sites) and Salima (2 sentinel sites).
- Mosquitoes were collected using the following methods:
 - 1) Pyrethrum Spray catches (PSCs) - 15 houses/ per site per month
 - 2) CDC-Light traps (CDC-LTs) - 10 houses per site per month.
 - 3) Human Landing Catches (HLCs) - 2 nights per house from 2 houses quarterly.

Epidemiological data

- Data was collected through DHIS2 for IRS district (Nkhotakota) and non IRS districts (Nkhata-Bay & Salima) from January 2017 to December 2019. Data from health facilities in a district is sent to a district health office and then entered into DHIS2 on monthly basis.
- Limitation – delays in entering monthly data from the district health office.

Methodology

Entomological monitoring sites (July 2018 to December, 2019)

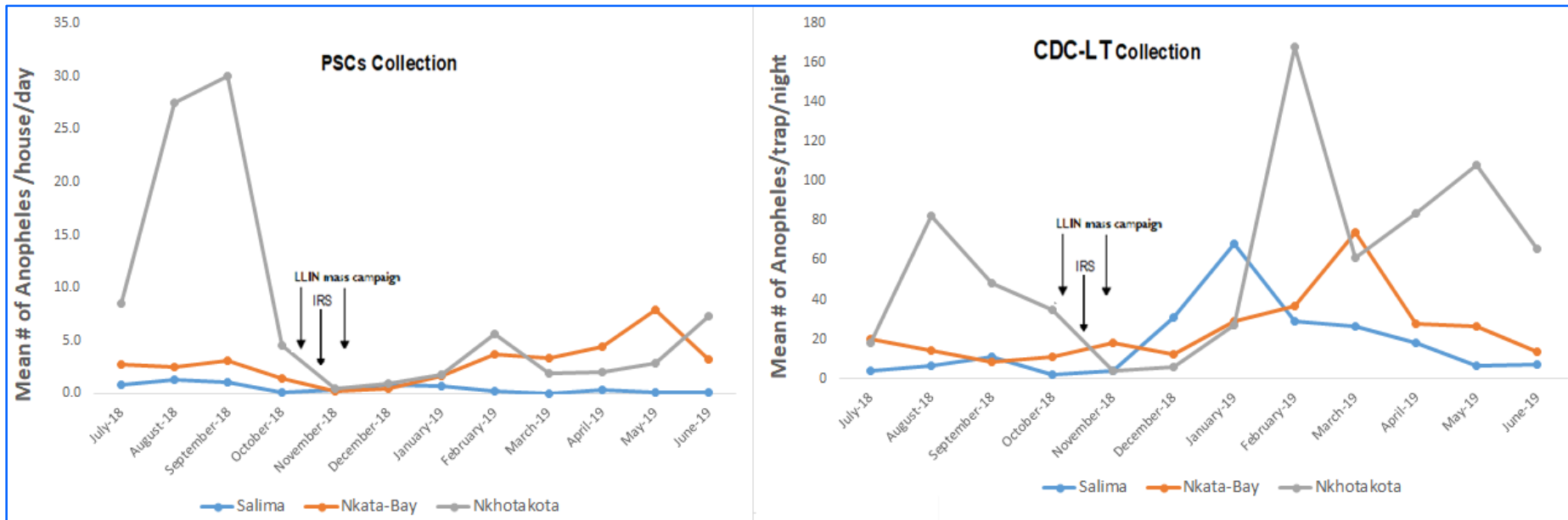


Entomological monitoring Results

- Species composition

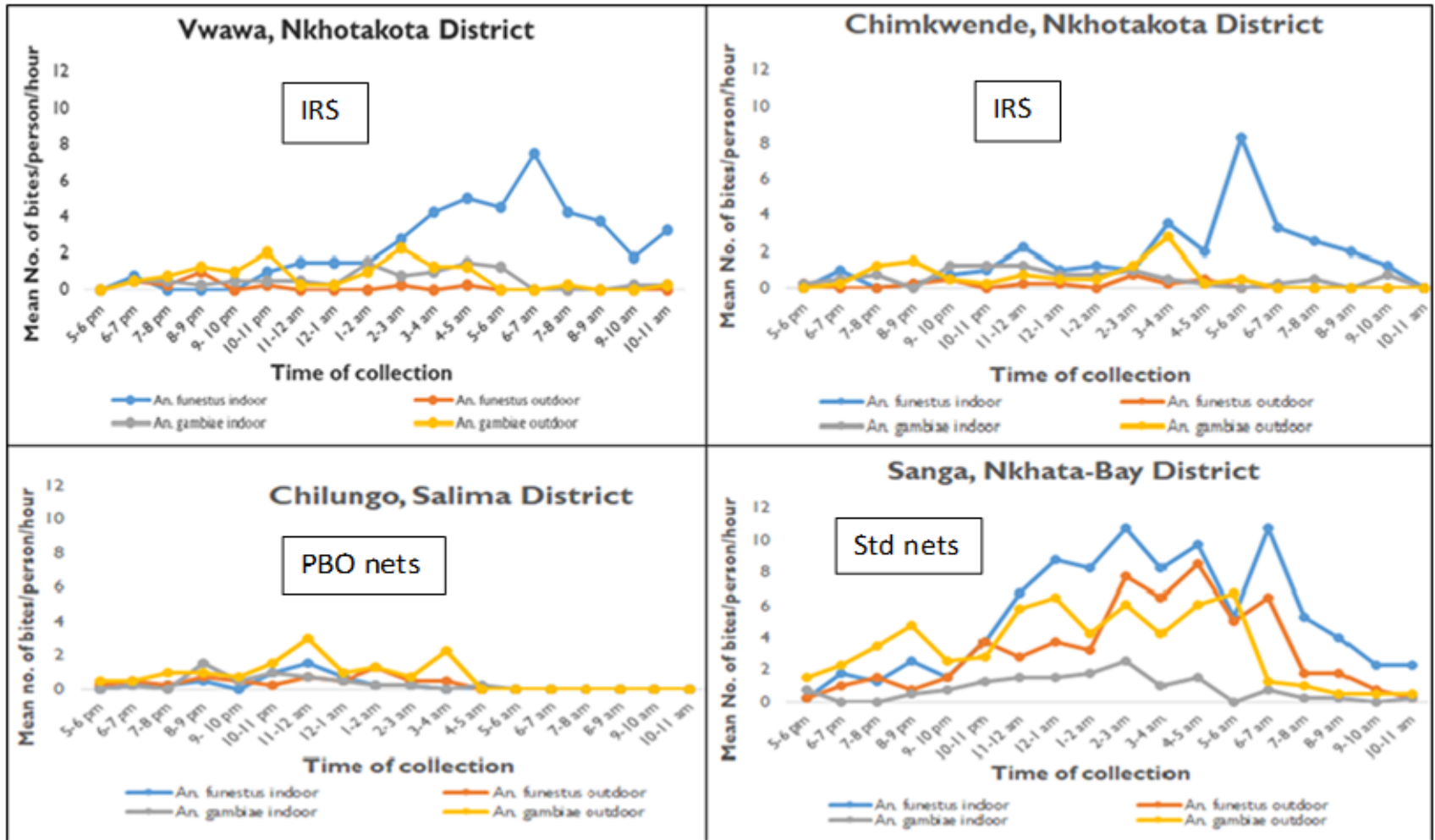
- *An. funestus* s.l. (Exclusively *An. funestus* s.s. & most abundant), *An. gambiae* s.l. (*An. arabiensis*, *An. gambiae* s.s.) and *An. coustani*.

- Indoor density



Entomological Monitoring Results

Biting pattern of *An. funestus* s.l. & *An. gambiae* s.l.



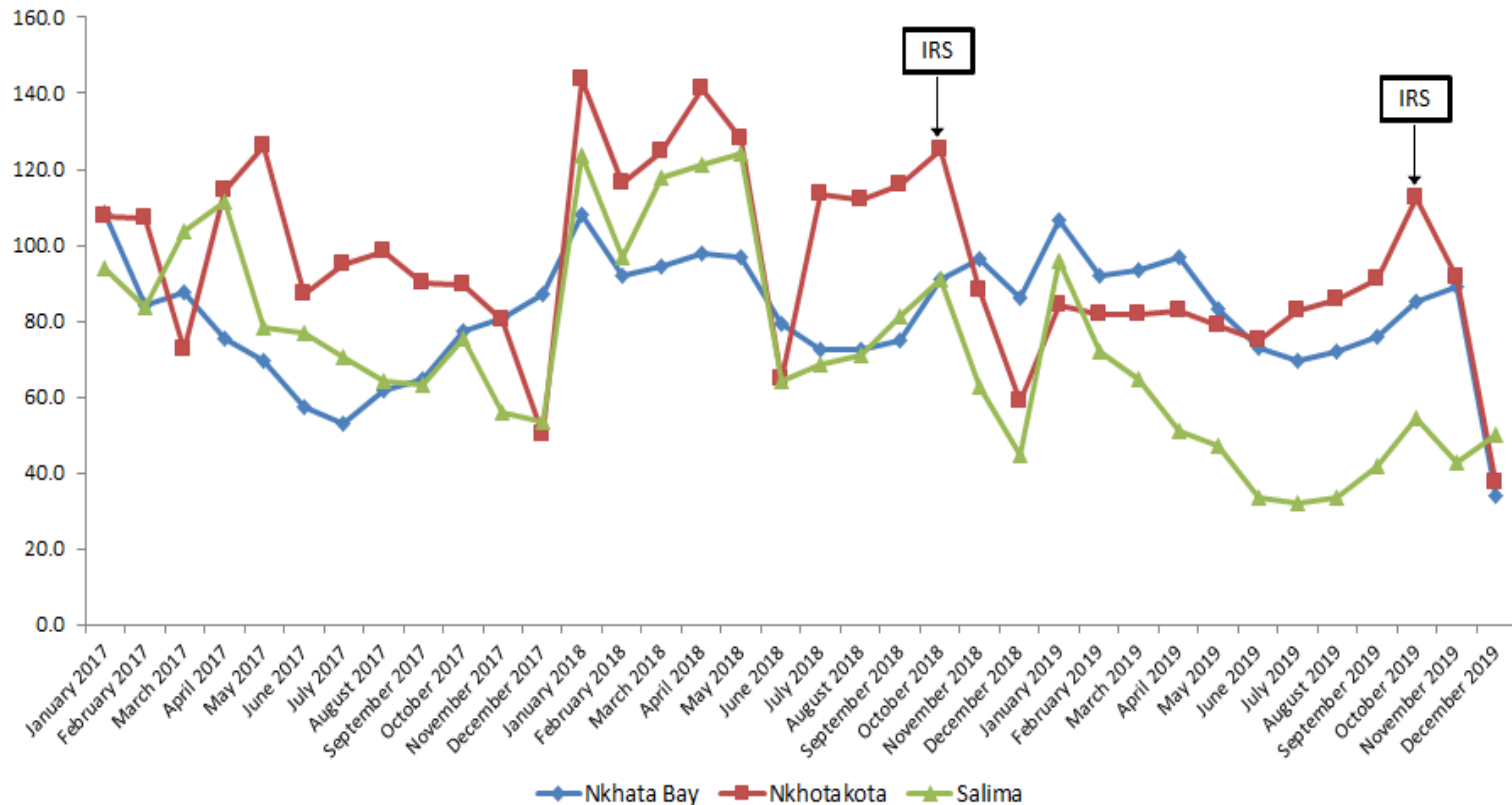
Entomological Inoculation rates

- The highest annual Entomological Inoculation Rates of *Anopheles* mosquitoes was recorded in Nkhata-Bay (83.9 infective bites/person/year). Followed by Nkhotakota (IRS District) with annual EIR of 52.1 ib/p/yr and lastly Salima (PBO nets) with annual EIR of 37.5 ib/p/yr.

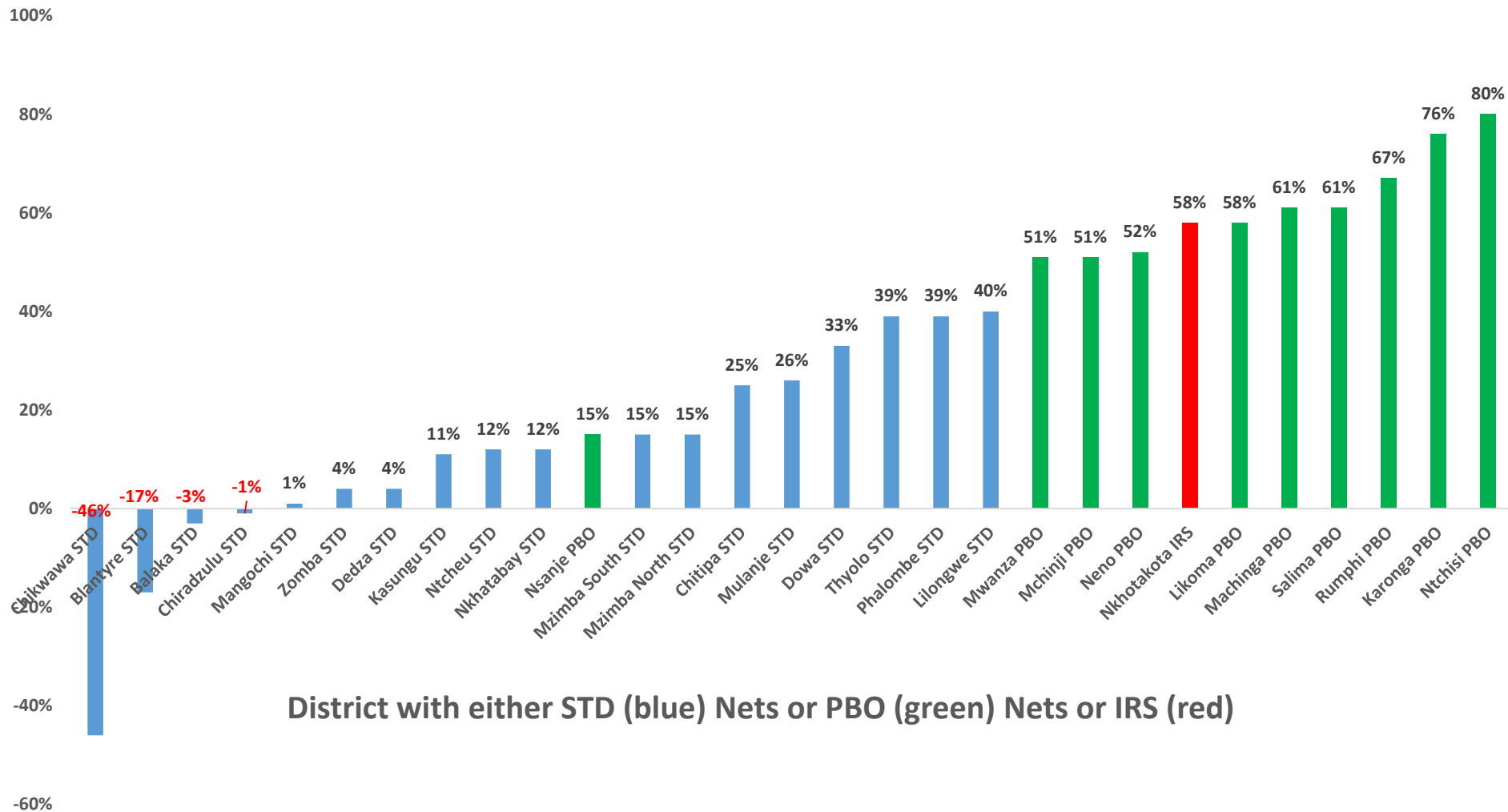
Epidemiological Results

Monthly District Malaria incidence rates (2017 to 2019)

Trends of Malaria Incidence Rate by Month



Malaria incidence in Malawi; Pre & Post vector control interventions





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