

# Evaluation of Lymphatic Filariasis Surveillance System in Coastal Region, Kenya, 2018–2023.

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# Introduction

- Lymphatic Filariasis(LF) is a mosquito-borne parasitic disease
- Globally
  - 51.4 M infected in 72 endemic countries (*World Health Organization,2021*)
  - Population at risk estimated at 885 million
  - Disability - 5.25M DALYS before Preventive chemotherapy
  - Economic burden estimated at US \$ 5.8 billion annually
- Kenya
  - LF endemic in 6 Coastal Counties
  - Prevalence - 1%-7.6% (*Njenga et al,2022*)

# LF surveillance system objectives

- Elimination of LF through Mass Drug Administration of anthelmintic (MDAs)
  - WHO timeline - 2030
  - Kenyan national program timeline - 2027
- Morbidity management and Disability prevention
- Pharmacovigilance – MDAs/Adverse events
- Integrated vector monitoring

# Surveillance system Overview

- **Active population-based surveillance:** periodic Transmission Assessment Surveys(TAS) after MDA
- **Target population:** School based survey(6-7 year olds) and community based surveys( all ages)
- **Laboratory diagnosis:** using Filarial Testing Strips
- **Elimination thresholds:** <1% Microfilaremia and <2% Antigenemia after Mass Drug Administrations

# LF data flow

The Vector-Borne and Neglected Tropical Disease Unit(VBNTD)

Server (Data analysis and Storage )

Data Clerks

Sentinel sites and spot checks

County NTD Units

Sub-County NTD Units

Community Health Promoters

# Surveillance system evaluation objectives

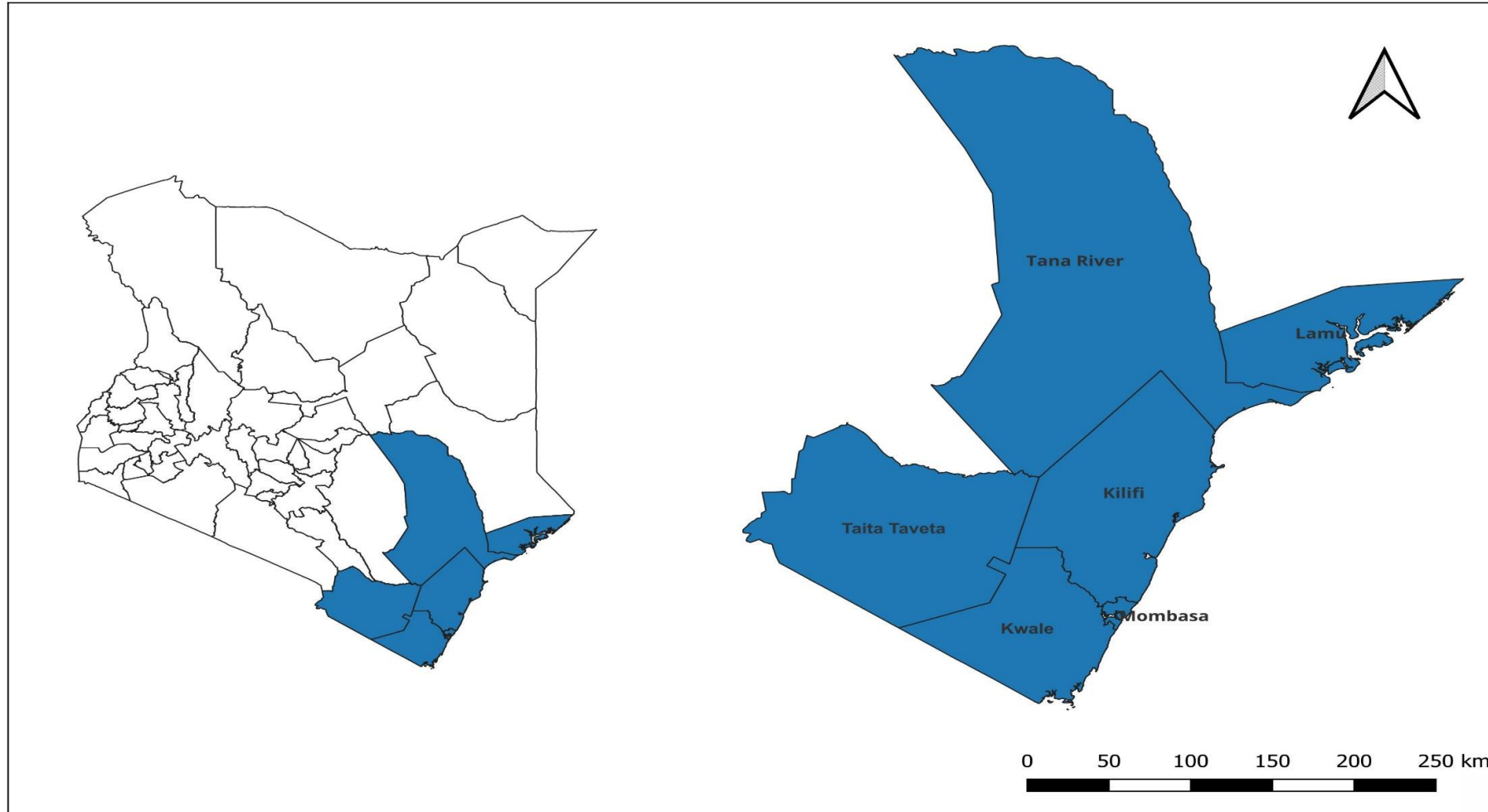
- **Broad Objective**

- To evaluate the LF surveillance systems' objective to eliminate LF in the coastal region by 2027

- **Specific Objectives**

- To evaluate the surveillance system usefulness and system attributes
- To characterize the lymphatic filariasis cases by time, place and person

# Evaluation site



# Evaluation Method

- **Population:** Program stakeholders and the Coastal region NTD unit
- **Sampling technique:** convenient sampling (23 implementation units)
- **Design:**
  - Self administered questionnaires
  - Key informant interviews
  - Retrospective data review
- **Strategy:** CDC guidelines on surveillance system evaluation



# Evaluation results - Quantitative

<b>Attribute</b>	<b>Indicator</b>	<b>Performance</b>
Acceptability	Familiarity/stakeholder availability	<b>81%</b>
Simplicity	Ease of data collection	<b>91%</b>
Flexibility	Multiple use	<b>61%</b>
Stability	Maintenance cost	<b>47%</b>
Data Quality	Data completeness	<b>&gt;90%</b>
Timeliness	From submission to reception	<b>65%</b>

# Evaluation results - Qualitative

- **Surveillance gaps:** No,
  - Recent entomological/ xenomonitoring
  - Community based survey
- **Behavioral insights:** positive
- **Key informant interviews:**
  - Disintegrated data storage
  - System upgrade with more variables
- **Data consistency:** missing variables in datasets, Incomplete laboratory results

“..access to the data as a program, is limited. Because we don't have control of the data...” Respondent 1.

the previous night

# MDA coverage/Prevalence trend, Kilifi County

## Drug coverage

Av(88%)

2016

69%

2017

83%

2018

89%

2019

91%

2020

101%

2022

96% Av(88%)



Mapping 10.1%

2010

Pre-TAS(0.5%)

2021

TAS(0.08%)

2022

## Prevalence

- Transmission assessment Survey (TAS)

WCE

WORLD CONGRESS OF EPIDEMIOLOGY 2024



# Discussion

- LF elimination is on track, Community-based surveys compared to school-based surveys, e.g. Samoa **6.2%** vs **0.7%** (*Sheel et al., 2018*)
- Lack of Entomological studies - accurate measure of potential transmission (*Dorkenoo et al., 2018*)
- Fragmented data storage, Lack of laboratory confirmatory results inclusion difficulties in analysis
- Stability, Paper-based data collection vs electronic-based data collection (*Zekele et al., 2019*)

# Conclusion

- **Success of the interventions**

- Decrease in LF prevalence an indication that MDAs are effective for Kilifi County
- Overall performance score, 72% on system attributes

- **Surveillance enhancements needed**

- School based Survey - potentially missing high risk populations
- Entomological monitoring, vector dynamics and transmission risks

- **Data management improvements**

- Integrated data systems, fragmented data storage a challenge for data analysis and utilization
- Missing variables compromise data completeness and quality

# Recommendations

- National and local health authorities
  - Coordinate and implement community based surveys
- National program and research institutions
  - Conduct entomological studies and allocation of resources
- Program implementors and partners
  - Help implement and fund integrated surveillance approach
- Data management specialists, IT professionals and program managers
  - Develop integrated data storage systems

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**Thank you**