



# Threats to ITN use – real and imagined

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# Overview

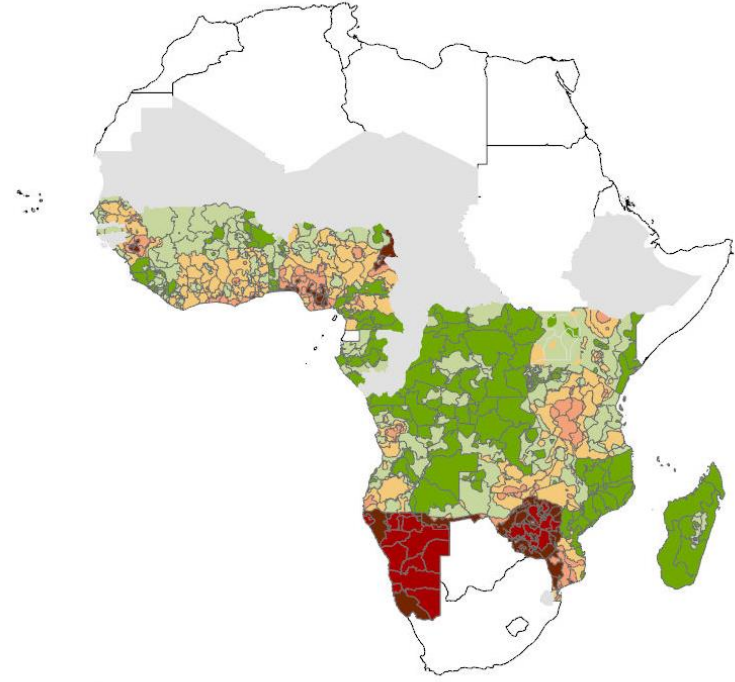
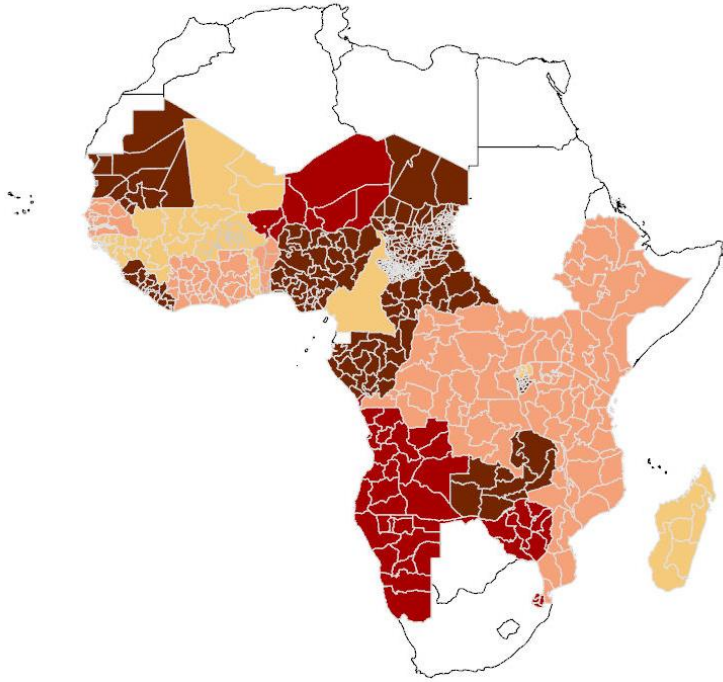
- Introduction
- Threats to ITN Use: Myth Busting
  - ITN use is stable throughout the year
  - People only use nets they like
  - Household heads tend to hoard nets
  - Net use is binary
  - Net use is everything!
- Summary/Conclusions

## Introduction

**You can't use a net  
if you don't have  
one**

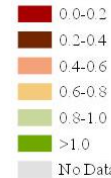
AFRICA ITN USE  
SOURCE: DHS & MIS 2009-17

AFRICA ITN USE:ACCESS RATIO  
SOURCE: DHS & MIS 2009-17



LEGEND

ITN USE:ACCESS RATIO



0 5001,000 2,000 3,000 4,000  
Kilometers



# Myth 1: ITN use is stable throughout the year



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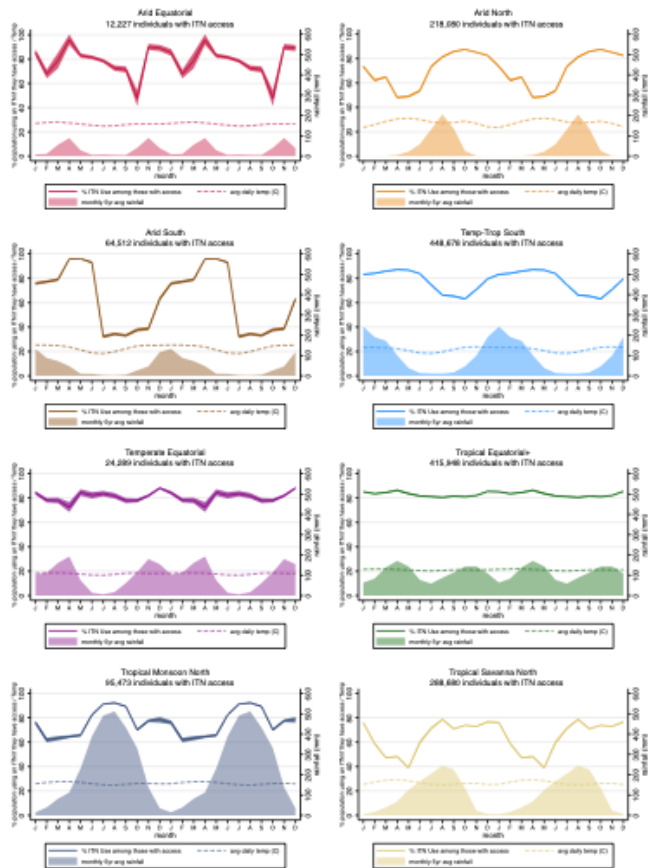


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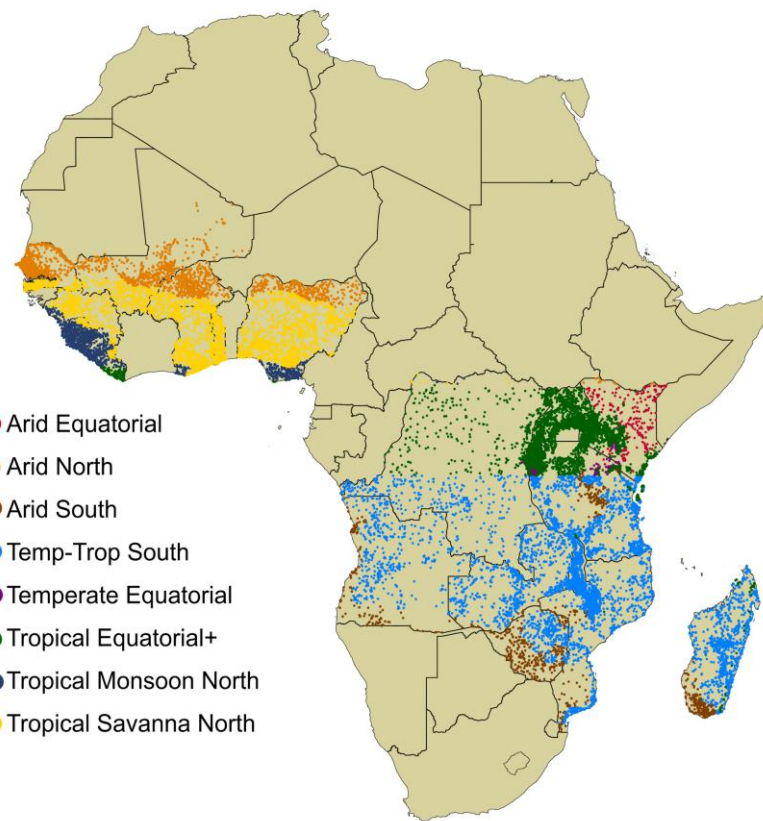
# Seasonal patterns

- Widely documented that ITN use is lower in dry season and higher in rainy season
- But what are these patterns like in different countries and climate zones, once we account for who has an ITN available?

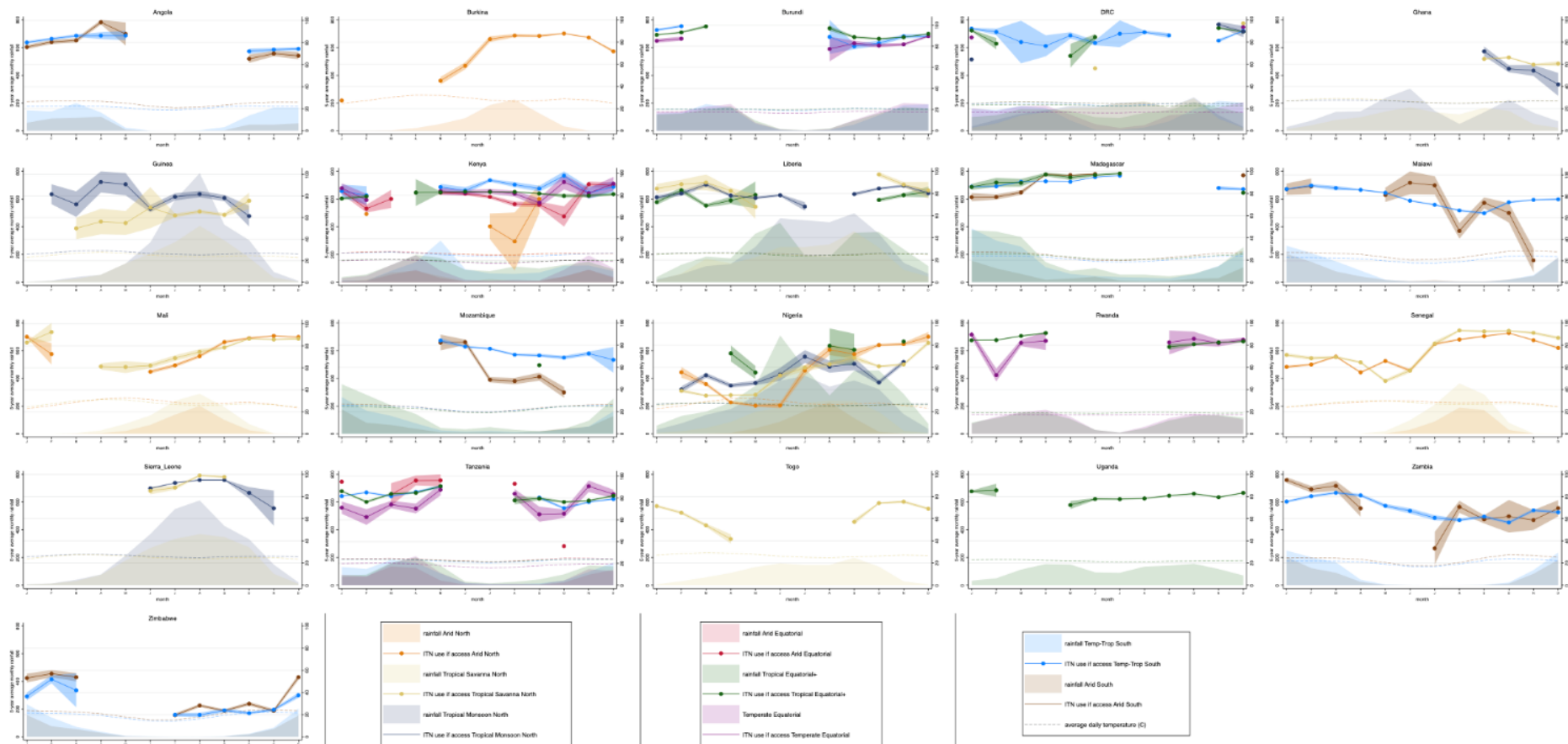
## Proportion of people using an ITN the previous night among those with access



PMI VectorWorks



# Seasonal patterns in the proportion of individuals that used an ITN the previous night, among individuals with access, within distinct climate zones





# What to do?

- Recognize seasonal patterns and account for them when interpreting new survey results
- Promote ITN use in ‘shoulder season’ and in dry season to ensure peak ITN use covers entire transmission period
- Compare ITN use patterns to transmission seasonality

# Myth 2: People only use nets they like



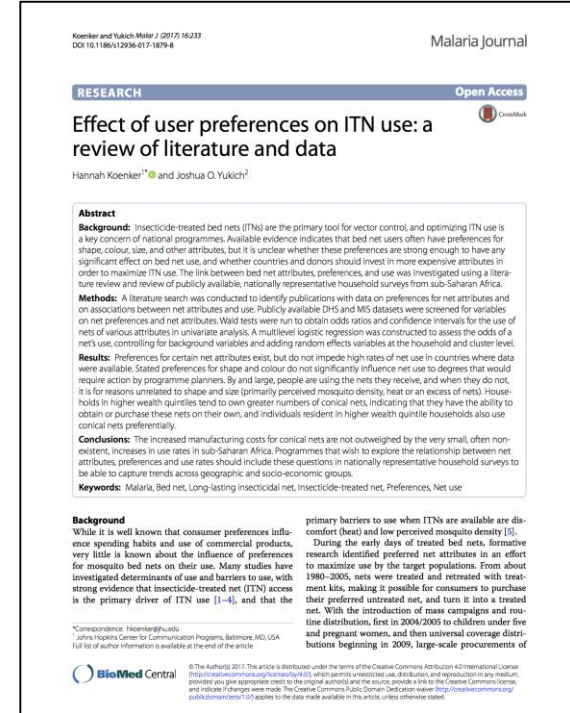
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# Preferences

- Hard to detect differences in use of nets of different shapes/colors/textiles, because most households do not have an excess of options
- People are using what they have (they have no choice...)
- However, they may not be treating non-preferred nets the same
- Additional research is needed



# Myth 3: Household heads hoard nets



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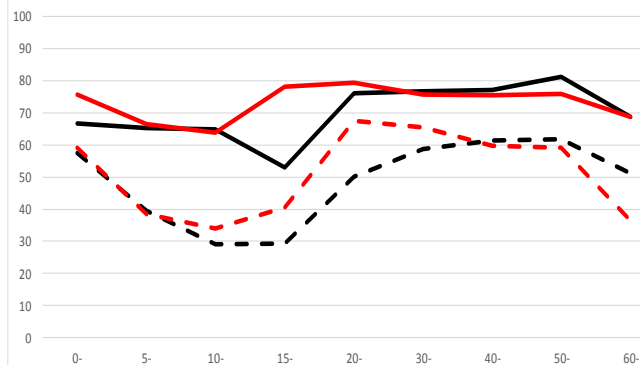
# Age and Gender Trends in ITN use

- Widely documented that ITN use varies by age and gender of household members
- But to what extent are these variations influenced by household ITN supply?

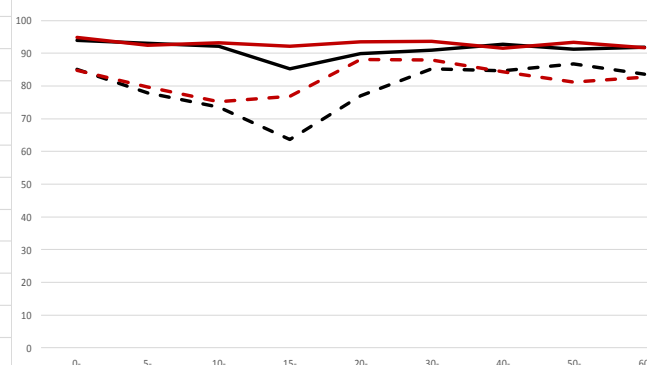


## ITN use by age, gender and household supply

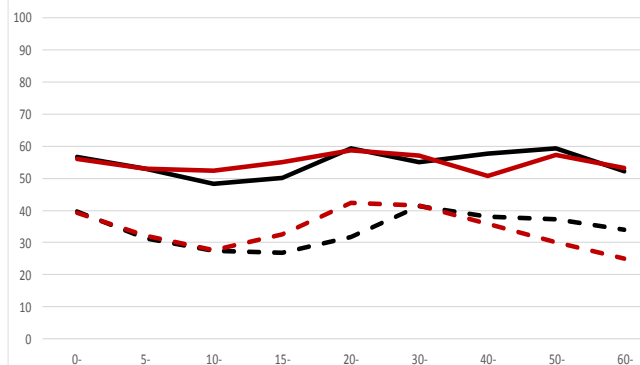
Angola 2015-16 DHS



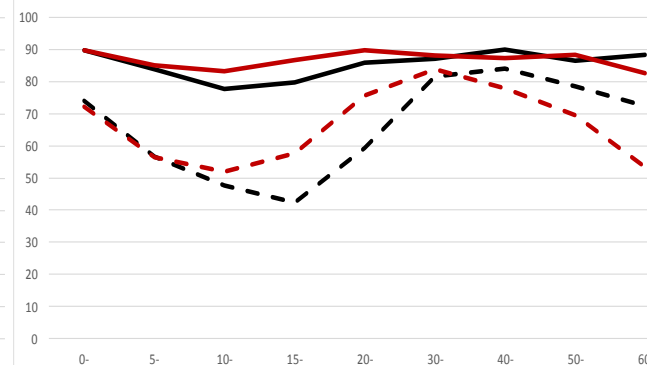
Madagascar 2016 MIS



Chad 2014-15 DHS



Democratic Republic of Congo 2013-14 DHS



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## Age and gender trends in insecticide-treated net use in sub-Saharan Africa: a multi-country analysis

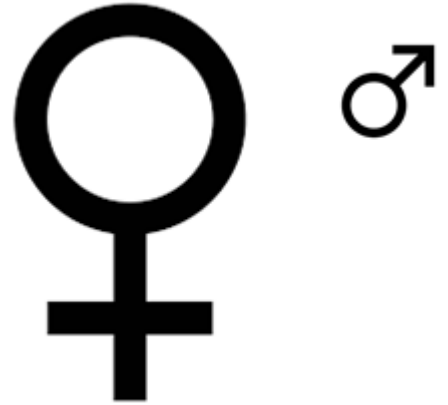
Bolanle Olapeju, Ife Choiriyah, Matthew Lynch, Angela Acosta, Sean Blaufuss, Eric Filemyr, Hunter Harig, April Monroe, Richmond Ato Selby, Albert Kilian and Hannah Koenker

### LEGEND

	Males in households with ITN: person ratio >0 and <0.5
	Males in households with "enough nets" (ITN: person ratio ≥0.5)
	Females in households with ITN: person ratio >0 and <0.5
	Females in households with "enough nets" (ITN: person ratio ≥0.5)
y-axis	Percent who slept under an ITN
x-axis	Age group of household member

# Key Points

ITN use is typically higher in females compared to males especially when the household doesn't have enough ITNs



# Key Points

Young children (0-5) and women of reproductive age are prioritized when the household doesn't have enough ITNs.





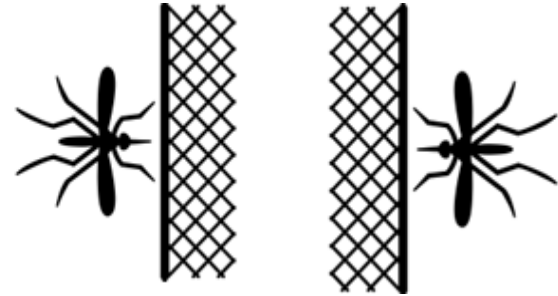
# Key Points

Older children are least likely to have used an ITN the previous night, in households with not enough ITNs.



# Key Points

Age and gender differences in ITN use nearly always disappear when the household does have enough ITNs.



# What to do?

More nets are needed to ensure households have enough ITNs for all members, including men and school-aged children.

Mass campaigns, ANC and EPI, School and Community



# Myth 4: ITN Use Is Binary



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# Understanding the Net Use Gap in Ghana

- Qualitative research to understand experiences behind the numbers
- It's not just “users” and “non-users”; ITN use exists on a spectrum and can change over time
- Situational and seasonal use is common
- Addressing challenges to *consistent* use is critical

*“For me, even if I will sleep in it (ITN), it will not last for seconds then I start to sweat, you will think hot water has been poured on me so I do not sleep in it.”*

-Male Community Leader, Eastern Region, Ghana



*“....I had a baby girl but we were not sleeping in the mosquito net and she had malaria. She looked very pale...so, we rushed her to the clinic... When we arrived there, she was dead, my baby girl was dead. So since that time, we have slept in the mosquito net every day. Even when it is hot, we sleep in it.”*

-Female caretaker of a child under 5, Central Region, Ghana



# Motivators for Consistent ITN Use

- First-hand experience with malaria-related illness or death
- Positive experience using an ITN over time
- Sound sleep
- Cost savings of prevention over treatment
- Innovations to overcome barriers to ITN use





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# What to do?

- Identify and address context-specific challenges in locations with large ITN use gaps
- The case of Ghana:
  - Increase ITN airing time before first use
  - Increase the saliency of malaria risk
  - Highlight cost and time savings of prevention over treatment
  - Develop a culture of ITN use, beginning in primary schools
  - Identify and promote solutions for using ITNs outdoors and increasing airflow in sleeping spaces
  - Position ITN use within the broader context of malaria prevention practices and tools

# Myth 5: Net Use is Everything!



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*“When you are outside you really can’t wear the bed nets, now can you?”*

-Female Community Member, Unguja Island, Zanzibar



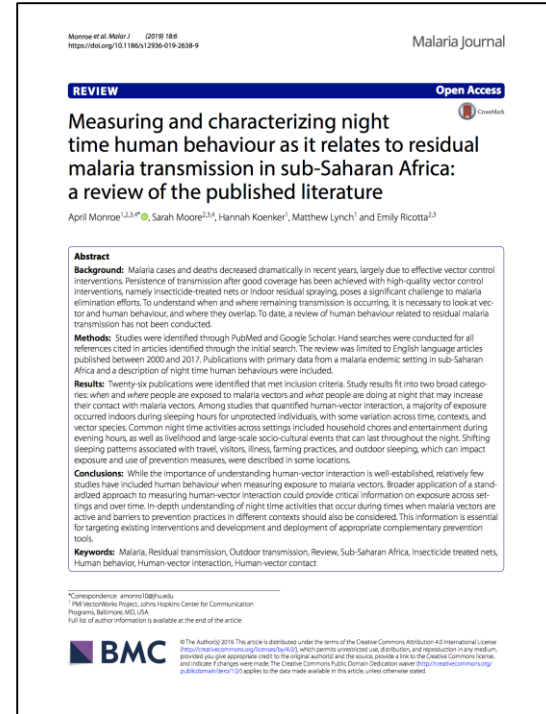
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# What We Know

- ITNs remain a cornerstone of malaria prevention
- However, understanding and targeting the exposure that remains is critical
- To do so, we must look at the overlap of human and mosquito behavior



## VECTOR BITING



### All-night activities



- Livelihood activities e.g. security, fishing
- Socio-cultural events e.g. weddings, funerals, religious ceremonies
- Visiting family and friends (travel)

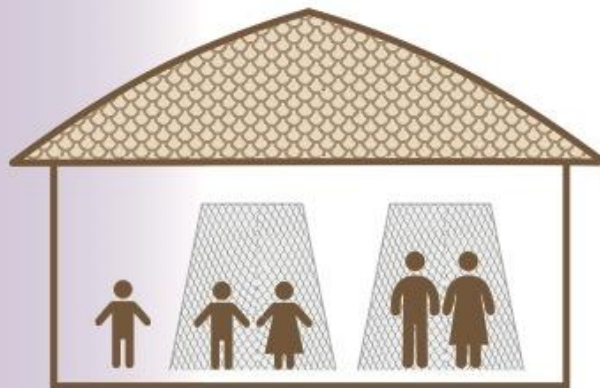


### Evening activities

- Household chores
- Socializing
- Children playing
- Entertainment e.g. watching television
- Buying and selling at shops
- Evening prayer
- Preparing and eating dinner



### Safe zone - ITN use



### Early morning activities

- Household chores
- Prayer
- Farming
- Preparing and eating breakfast
- Small business activities
- Grooming
- Caring for animals



6:00PM

8:00PM

10:00PM

12:00AM

2:00AM

4:00AM

6:00AM



# What to Do?

- Standardize approach to measuring exposure to malaria mosquitoes across settings and over time
- *Identify when* (time of night) and *where* (indoors versus outdoors) people are exposed
- Identify *what* activities are putting people at risk





# Summary/Conclusions

- ITN use is **not** stable throughout the year
  - Net use is driven by presence of mosquitoes, given lag between peak rain and peak ITN use
  - Likely also related to perception of risk of malaria (driven by perceived mosquito density)
- People **do not** only use nets they like
  - People largely use nets, even if they do not meet their preferences
  - More research is needed to understand this issue

# Summary/Conclusions Cont.

- Household heads **do not** hoard nets
  - Women of reproductive age and young children are prioritized when there are not enough nets
  - Increasing access to nets helps close age and gender gaps in use
- Net use is **not** binary
  - ITN use is not binary; we must identify and address barriers to consistent use
- Net use is **not** everything!
  - To sustain and increase gains, we must identify and address remaining gaps in protection

# Thank You!



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