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
Myth 1: ITN use is stable throughout the year
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

Arid Equatorial
12,287 individuals with ITN access

Arid North
211,080 individuals with ITN access

Arid South
64,893 individuals with ITN access

Temp-Trop South
468,876 individuals with ITN access

Temperate Equatorial
24,699 individuals with ITN access

Tropical Equatorial
455,916 individuals with ITN access

Tropical Monsoon North
141,229 individuals with ITN access

Tropical Savanna North
283,881 individuals with ITN access
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
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
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

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
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
Barriers to Consistent ITN Use

- Heat, lack of airflow, and congestion in sleeping space
- Burning, itching, and strong chemical scent, even after airing for 24 hours
- Perception that net use is not possible in certain contexts e.g. outdoors, in cramped sleeping spaces, or when traveling
- Low perceived need due to other prevention products
- Perception in some settings that strong men do not need to sleep under a net
“....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
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!
“When you are outside you really can’t wear the bed nets, now can you?”

-Female Community Member, Unguja Island, Zanzibar
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!