



Where nets are not enough:
**Recent findings on
non-use of LLINs &
thoughts about the
need for alternatives**

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Steven A. Harvey, JHSPH
April Monroe, CCP

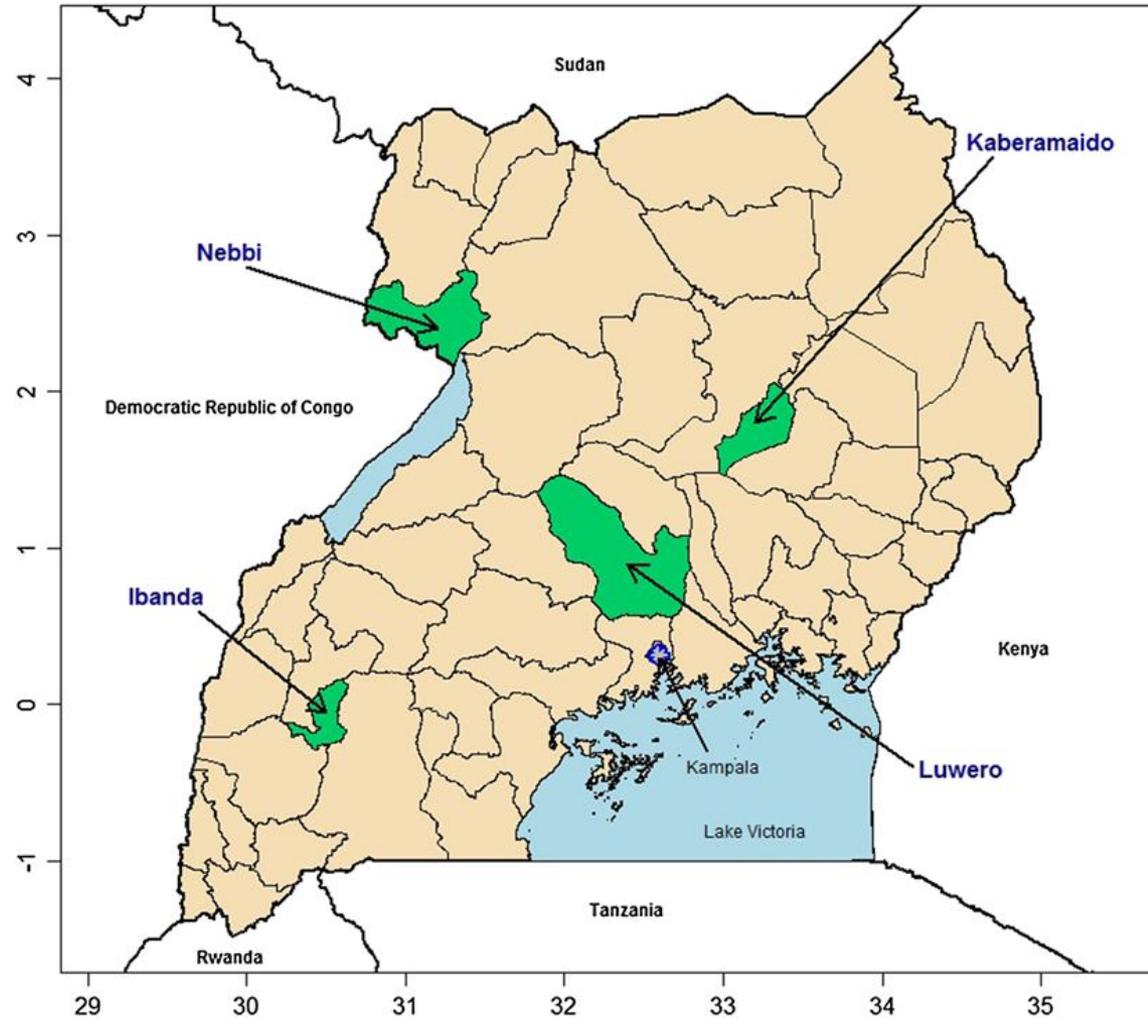
TWO STUDIES, TWO COUNTRIES

- Uganda: Culture of Net Use study (4 districts)
- Ghana: Outdoor sleeping & nighttime activities in northern Ghana (2 regions)

UGANDA

Methods

- 28 IDIs
- 4 FGDs
- 4 Districts:
 - Ibanda
 - Kaberamaido
 - Luwero
 - Nebbi



Reported reasons for spending the night away from home

Social events

Funerals

Weddings

Religious events

Celebrations

Visiting

Discos

Livelihood activities

Occupational activities

Household chores

Times of difficulty

Domestic disputes

Insurgency

Threats of violence

Sickness

Mental illness

Intoxication

Prison

Barriers to bed net use outside the home

Social Barriers	Logistical barriers	Resource constraints
Appearing “proud”	Crowding, congestion	Leaving other family members unprotected
Appearing disrespectful	No place to hang net	
Expecting to stay awake all night	Inconvenient to carry	
Inconveniencing others	Restricts movement	
	No time to grab net	
	Makes user highly visible	

Social Barriers

“You cannot carry your net to a [funeral], because people will speak a lot about you. They will say that you are showing off in such a place when people are in sorrow.”

- Female informant, Luwero Uganda

Monroe, A., Harvey, S. A., Lam, Y., Muhangi, D., Loll, D., Kabali, A. T., & Weber, R. (2014). "People will say that I am proud": a qualitative study of barriers to bed net use away from home in four Ugandan districts. *Malar J*, 13(1), 82. doi: 10.1186/1475-2875-13-82



Logistical Barriers

“You cannot take along a mosquito net to a wedding; where do you think you will hang it? Won’t you be sleeping on chairs? Tell me then, how you would hang your net on such a sleeping space?”

-Male informant, Ibanda, Uganda

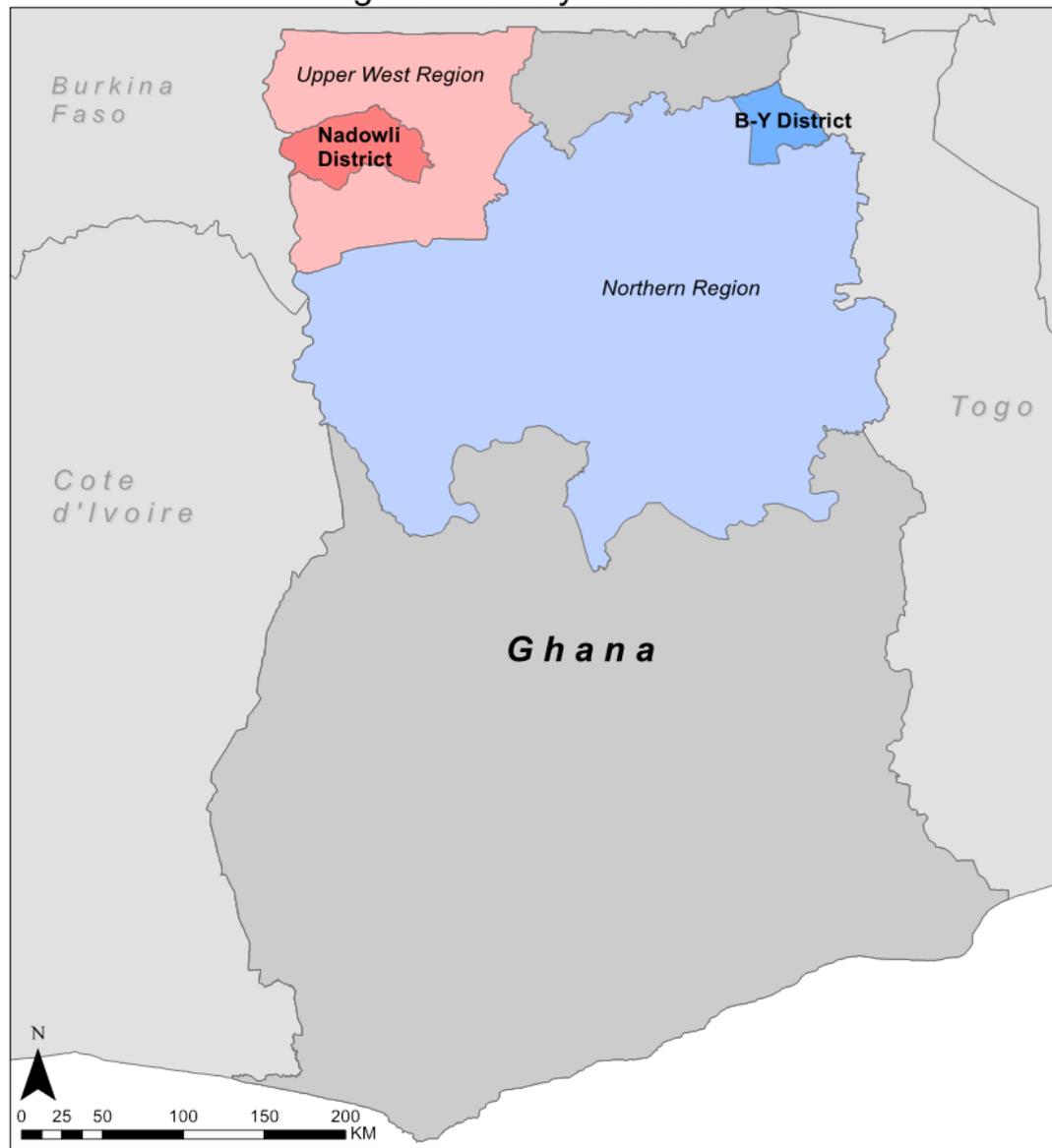
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GHANA

Context:

- 12.5 million free LLINs distributed 2010-12
- IRS in selected northern districts since 2008
- Minimal reduction in parasitemia

Figure 1. Study Districts



Legend

- | | |
|-------------------|----------------------------|
| Northern Region | Bunkpurugu-Yunyoo District |
| Upper West Region | Nadowli District |

Malaria parasitemia prevalence: children <5

Bunkpurugu District, Northern Region*

	Pre-IRS (2010-11)	Post-IRS (2011-12)
High season	52%	50%
Low season	35%	30%

* Source: PMI / U Ghana Noguchi Institute pre- and post-surveys (n=1,900 per wave)



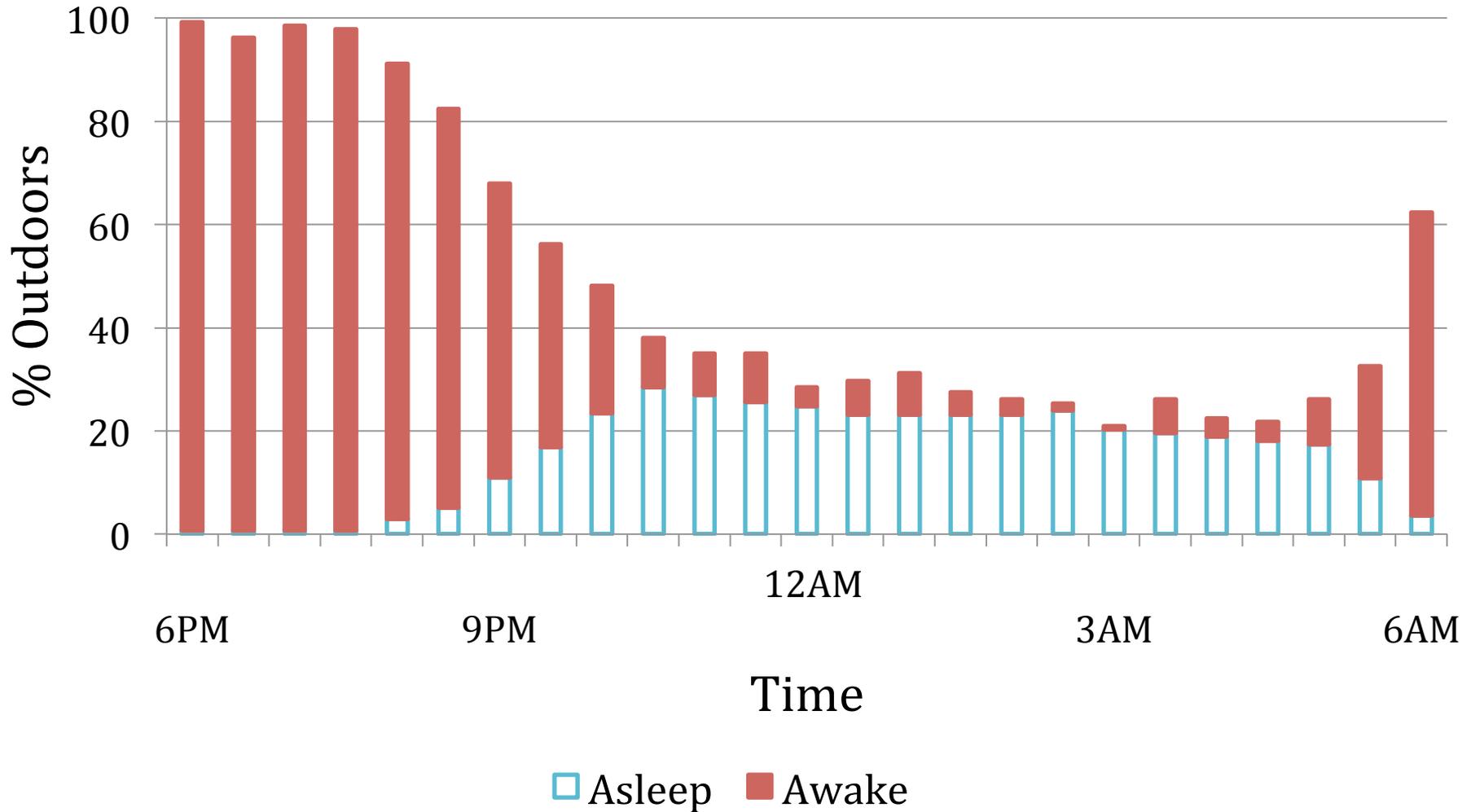
Ghana: Methods

- Late dry season (Feb – Mar 2014)
- Nighttime household observations – 24 HH / 182 persons
 - Observer present 18.00 – 06.00
 - Household census + sleeping space & LLIN inventory
 - Freehand observation notes taken every 5 min
 - Presence of each HH member recorded every ½ hour: indoors/ outdoors; awake/asleep; under a net/not under a net
- 48 IDIs: outdoor sleeping, net use, nighttime activities
 - 14 Health workers
 - 6 CHVs
 - 28 community residents

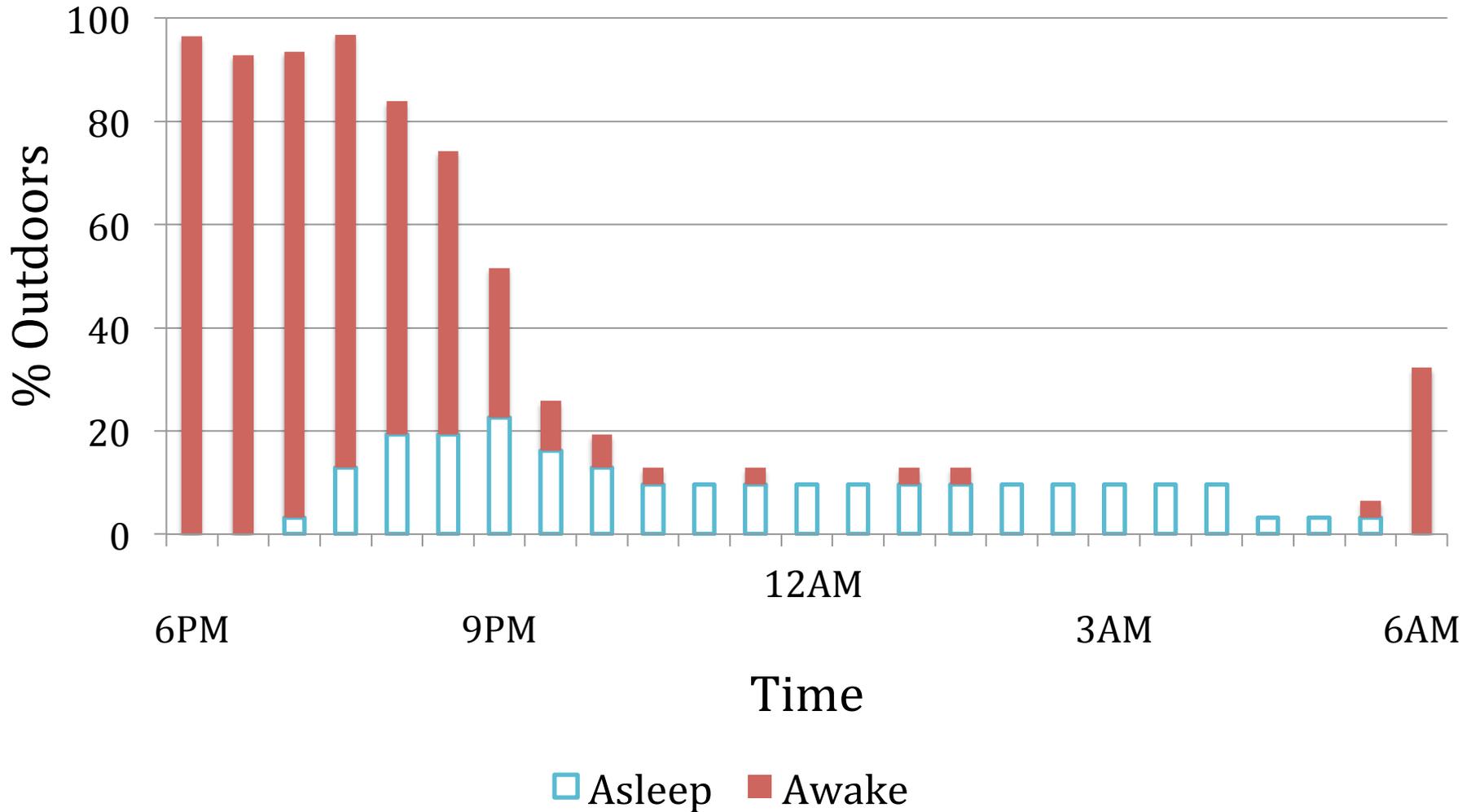
Monroe, et al. In Press. Outdoor-sleeping and other nighttime activities in northern Ghana: implications for residual transmission and malaria prevention. *Malar J*.



Percentage of population 5 and over, outdoors throughout the night (n=151)



Percentage of population <5, outdoors throughout the night (n=31)



Outdoor Sleeping

- 42 % of observation participants slept outdoors at some time during the night



Net use findings

- 17% observed use among those with access
- Principal reasons for non-use:
 - Heat
 - Inability to hang outdoors
 - Fluidity of sleeping spaces

“When the rooms are hot, they say that sleeping under the mosquito net you are in hell because the heat is too much.”

- Male health worker, age 40, Northern Region





Outdoor activities: Early nighttime (18.00-23.00)

- Working
- Household chores
- Socializing
- Eating
- Bathing
- Studying



Outdoor Activities: Late night & morning

Late Night (23.00-04.00)

- **Funerals**
- Weddings
- Festivals
- Illness
- Emergencies

Morning (04.00-06.00)

- Household chores
- Bathing
- Eating



“For us, almost all the time we have funerals. When you return home from one funeral, they come to inform you about a different one, then another and another. When you are bereaved and someone comes to mourn with you, you have to also go and mourn with [them]... If you don’t go to mourn with people when they are bereaved...they won’t come to mourn with you. So we assist one another during bereavement.”

- Male informant, Upper West Region



Conclusions

- There are contexts in which LLINs could be used, but are currently underutilized
- There are also times and situations for which LLIN use is infeasible
- LLIN use alone may not be enough to eliminate transmission in some settings
- Need to identify alternative vector control measures for situations in which people will not use LLINs



Recommendations

- Epidemiological and entomological research needed to quantify relative risk
- Research on acceptability of outdoor net use, where feasible
- Product development of more flexible net designs
- Development and implementation of complementary outdoor prevention strategies
- Community trials to test acceptability and feasibility of proposed alternatives.



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Contributors

- Study participants
- Local leaders
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- Ghana National Malaria Control Program

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Thank you

For more information on these studies:

Monroe A, Harvey S A, Lam Y, Muhangi D, Loll D, Kabali AT, & Weber R. (2014). "People will say that I am proud": a qualitative study of barriers to bed net use away from home in four Ugandan districts. *Malar J*, 13(1), 82. doi: 10.1186/1475-2875-13-82

<http://www.malariajournal.com/content/13/1/82>

Monroe A, Asamoah O, Lam Y, Koenker H, Psychas P, Lynch M, Ricotta E, Hornston S, Berman A, Harvey S. In Press. Outdoor-sleeping and other nighttime activities in northern Ghana: implications for residual transmission and malaria prevention. *Malar J*.

