Malaria among nomads and migrants: a neglected people at risk

Getting health services to Africa’s static population is one thing, but reaching those on the move is quite another. Professor William Brieger assesses some options

If malaria is to be eliminated in the near future, we must find it in all the nooks and crannies of the countries and communities where we work. This includes focusing on populations on the move such as nomads and migrant workers. Both of these groups can move between areas of high and low malaria transmission, such that on the one hand they may bring malaria into an area where it has been reduced or eliminated or on the other hand they may come from an area where transmission is low and be quite vulnerable to the serious effects of the disease upon entry into a high-transmission zone.

Nomads

One often thinks of nomads as pastoralists, but, ‘Nomads are generally classified as hunters, collectors and pastoralists.’ According to Sheik-Mohamed and Velema, ‘Pastoralists migrate periodically with their herds to maximally exploit scarce resources (pasture and water) which they need for their animals and themselves, and which are dispersed in time and space.’

Sixty percent of the world’s nomadic populations live in Africa (some 30–60 million people). Two of the most well-known nomadic groups in Africa are both pastoralists: the Fulani who may be found from Chad to Senegal and the Maasai who live primarily in Tanzania and Kenya. Several studies have documented that the health and disease profile of these nomads differs from the settled populations among whom they move.

Schelling and colleagues found malaria differences among nomadic groups themselves that may relate to the type of livestock they maintain. ‘Arab camel breeders usually stayed in a dry environment where they had very low prevalences of clinical malaria. Their exposure to malaria infection was for the most part limited to the wet season.’ In contrast, ‘Most Fulani breeders stayed at the borders of Lake Chad during the dry season – a more humid environment favouring the insect vector – and Fulani experienced higher clinical malaria frequencies during the dry season.’

This experience points out the important epidemiological variations among nomadic pastoralists. Some spend most of their time in drier and epidemic-prone malaria zones, while others move into areas of more stable endemicity in order to find water for their cattle. Another important epidemiological variation is the apparently higher levels of malaria immunity among the nomadic Fulani compared with nearby settled populations.

This of course does not mean that the Fulani are free from malaria, and therefore efforts are still needed to reach them with appropriate prevention and treatment interventions. Ironically, Gordon has shown that the Fulani definitely see malaria as a serious problem in their communities. ‘Malaria, called dyonté in Fulani, is the most common of bhuuri (the fount of most Fulani sickness) problems. Everyone has something to say about it. It is endemic. Eighty-one percent of those interviewed had malaria in the past year. If bhuuri is the Fulani disease from their point of view, then malaria is the Fulani disease par excellence.’

One key concern about the health of nomads is their relative neglect compared with the settled populations among which they move. Basically, health programmes often do not reach them. For example, among the Fulani living in south-western Nigeria, their children have lower immunisation rates than the settled farmers, their settlements were often not included in guinea worm surveillance and control, and they were usually not reached when local health services encouraged settlements to select community volunteers to help distribute...
ivermectin to control onchocerciasis.7

Nomads, not surprisingly, may feel alienated from the public health services available in the districts where they are grazing their cattle. Again, a study in southwestern Nigeria showed that the nomadic Fulani were significantly more likely to visit a private clinic during their most recent illness, while the settled Yoruba were more likely to use a government clinic.8

Even before a choice in health service is made, there are differences in household gender roles and dynamics that also play an important role in determining the different initial and subsequent actions taken by mothers and female caregivers to address child illnesses. Sarah Castle, in comparing the nomadic Fulani with the settled Dogon in Mali, found that “Ethnic” differences in mortality between the study populations… result from real variations in women’s social power within their domestic environments. Thus, lower Dogon mortality is a function of greater proportions of laterally structured households where women are free to pursue outside economic activity and yet have social support for household chores. Higher Fulani mortality reflects the more isolated nature of women’s household circumstances, their lack of time and autonomy to become financially independent and their lack of social support within their domestic environments.9

While one could recommend improving access to public health centres or improving the quality of private care providers, a better solution for mobile nomads may be recruitment and training of their own volunteer community health workers (CHWs). As Sheik-Mohamed and Velema observe, ‘Mobile health teams often are too costly and inefficient. The creation of regular points of contact along the migration routes, where nomadic CHWs can obtain supplies and advice and refer complicated cases, is likely to be more affordable and sustainable in the long run.’10

In fact, the inclusion of Fulani as community-directed distributors in onchocerciasis control efforts in southwestern Nigeria resulted in better ivermectin coverage among that group than among the settled populations.11 Recently Akogun has demonstrated that, ‘The combination of communication technology, rapid diagnostic tools, and antibiotic and antimalarial medicines,’ among Fulani volunteer health workers, ‘can increase access to evidence-based malaria management, reduce mortality and slow the development of resistance to drugs.’12

In East Africa the importance of extending health services to nomadic populations has been recognised by the Ministry of Health (M of H) together with the African Medical and Research Foundation (AMREF), who state that, ‘With community participation, there is need for an integrated approach to these health risks. The M of H and AMREF have incorporated a comprehensive intervention system to address the commonly occurring diseases such as malaria, diarrhoea, and pneumonia and address adult’s and children’s problems differently,’ within the Maasai community.13

Migrants
While nomadic pastoralists are technically migrants in that they are on the move, their own migration is intrinsic to their culture and way of life. When we use the term migrant, we are usually talking about individuals or groups who have moved, permanently or temporarily, within or outside their country of origin due to a variety of natural, economic, social, and political forces ranging from war, drought, and pilgrimage to economic crisis.14

A common type of migrant in West Africa is the migrant farm worker who provides agricultural labour on a seasonal basis.15 Some may come voluntarily or be ‘recruited’ as a form of near slave labour, especially on large agricultural estates. Migrants are mostly young and economically active men (15–40 years) who occasionally are accompanied by wives or female partners.16

Although migrant workers live within their ‘host’ community, they are often invisible when it comes to provision of health services. For example, during community directed treatment with ivermectin in southwestern Nigeria, migrant farm workers scored the lowest coverage rates.7

In another study these farm workers listed malaria as their second most serious health concern after body pain, but when asked what treatment they received, most used herbs or went to medicine shops, with few accessing public or private clinics.13

The problem of malaria and migrant agricultural workers is global. The problem of malaria in the Thai–Myanmar border areas persists primarily due to uncontrolled migration from neighbouring countries, particularly from Myanmar with its political difficulties.15 Malaria control measures are hampered by
Malaria

the remotes of the places where the migrants cum
refugees work. Some work in the agricultural sector as
daily-wage labourers while others collect forest prod-
ucts for their own consumption and to sell in the local
market. The challenge for malaria control with such mi-
gration is that the Thai–Myanmar border is infamous for
its multidrug resistant Plasmodium falciparum parasites.

Working conditions among migrants along the Thai–
Myanmar border play a major role in acquiring malaria as
they are exposed due to working in forests and living in
poor housing conditions. Migrants cannot afford ma-
laria preventive measures, such as using a mosquito net
or repellent to be used while working. Their economic
challenges often relate to differences in the ability of
migrants to adapt to their host country and socio-eco-
omic circumstances. 15

Although most of South Africa is not endemic for ma-
laria, its recent experience with migrants is instructive as
to why migrant workers often do not seek medical help.
According to IRIN, ‘They are perceived as taking jobs in
an economy with an estimated unemployment rate of
40%, but in which there is also a serious skills short-
age.’ 16 Resentment and xenophobia are intertwined.
Migration also plays a role in urban malaria. While
some African cities have conditions that promote breed-
ing of anopheline mosquitoes such as gardens, a good
portion of malaria cases are acquired when people
travel in from rural areas either in search of jobs or on
return from visiting relatives. 17 Experiences in Kisumu,
Kenya highlight this problem. ‘Malaria exposure during
rural travel comprises an important element of risk. Con-
trol of severe malaria in an urban setting may be com-
plicated by Plasmodium infections acquired elsewhere.
Epidemiologic studies of urban malaria in low transmis-
sion settings should take travel history into account.’ 18

The special case of migrant workers shows that
migration is not strictly a rural to urban phenomenon,
but a process that may bring non-immune people into a
malarial area. I was part of a team making a superviso-
ry visit to health facilities in the southern part of Burkina
Faso which recently yielded another perspective on gold
mining and malaria. 19 Along the road one saw individ-
uals engaged in gold mining by hand. These persons had
set up their own camps with ad hoc housing. Local
health workers were concerned about the potential for
transmission of sexually transmitted diseases, but there
are also malaria concerns.

The miners are essentially migrant workers. It is
questionable that as such they would have access to
insecticide-treated bednets. As a non-indigenous
population one also wonders about their access to ap-
propriate malaria treatment services. Finally there is
concern in the current rainy season as to whether the
surface mining operations might have some impact on
mosquito breeding sites. It is not clear how such mining
operations benefit the national or local economy, and
clearly the health threats are numerous. The malaria
elimination environment is certainly complicated when
one adds the needs of migrant workers.

In conclusion, malaria is clearly a disease on the
move when it affects nomadic pastoralists and migrant
workers. The challenge to local health services is to
make malaria prevention and treatment services easily
accessible along migration routes and near migrant
settlements. These actions require overcoming local
prejudices against the migrants, which may be reinforced
by the fact that local health services often do not have
adequate malaria commodities (nets, medicines) to
serve the indigenous population. Malaria elimina-
tion will be a long-term process where commitment is
needed at all levels. We may not expect to stop human
migrations, but hopefully we can prevent the movement
of malaria along with them.

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