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# Discussion Paper

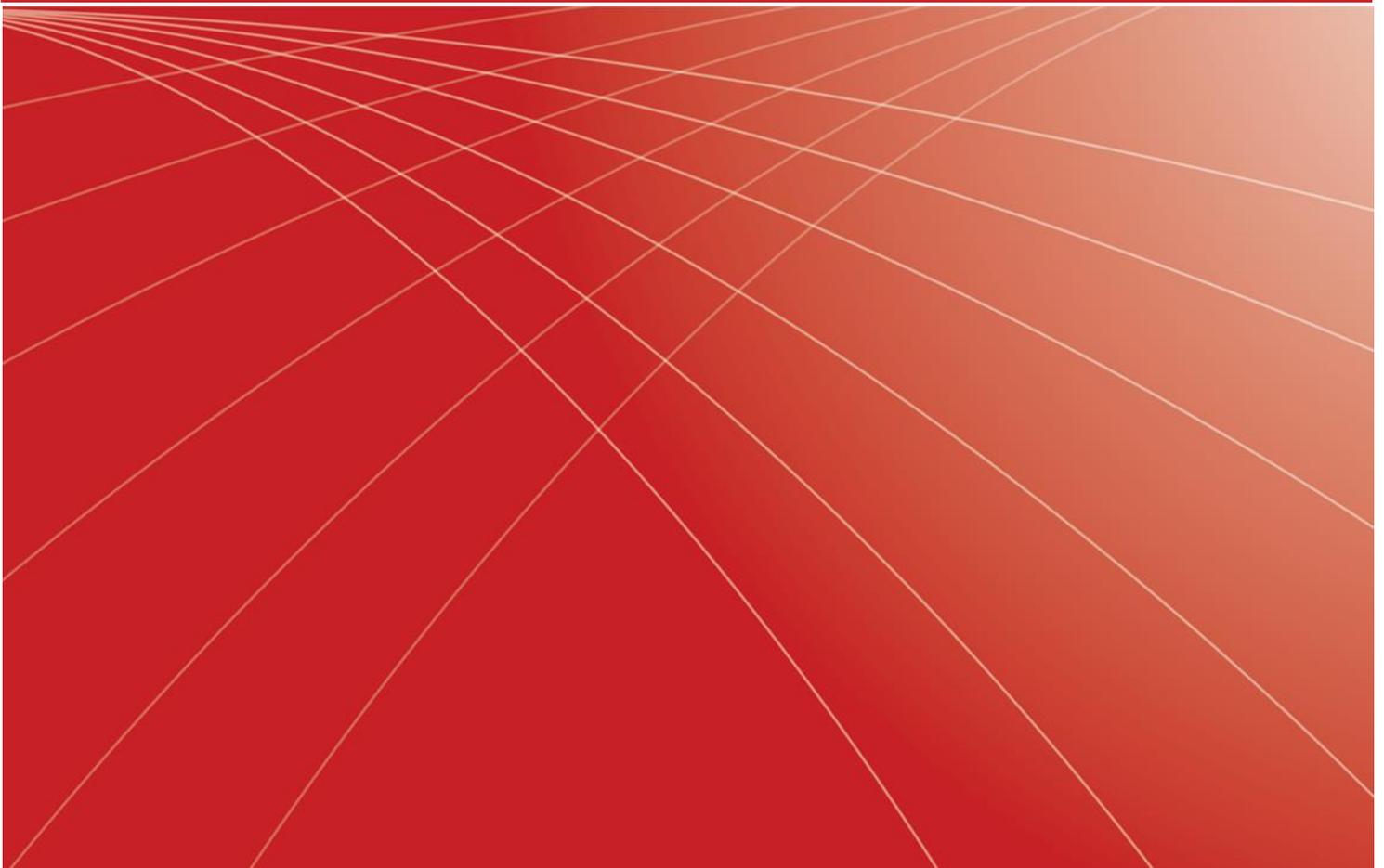
## Gender and Malaria

Making the investment case for programming that addresses the specific vulnerabilities and needs of both males and females who are affected by or at risk of malaria

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HIV, HEALTH AND DEVELOPMENT



# BACKGROUND

Malaria is not gender blind simply because the mosquito does not discriminate in biting men or women. There are many ways in which gender can influence who gets malaria and how it is treated. An estimated 10,000 maternal deaths each year are associated with malarial anaemia, but this number is likely severely under-estimated. In addition to children and pregnant women being biologically more susceptible to malaria, social, economic and cultural factors play a crucial role in determining differences in women's and men's vulnerability to malaria and access to malaria prevention and treatment services. In particular, there is growing evidence that the gender-specific effects of malaria are felt most acutely by poor, rural and marginalized women, indicating that development, gender equality and health outcomes are intrinsically linked. And yet very little work has explored the ways in which the risks and effects of malaria are determined by the intersections of sex, gender roles and poverty. Pregnancy is the sole sex-specific area on which significant research and programmatic effort has focused, but even here the analysis of the social, political and economic drivers of pregnant women's insufficient access to key prevention and treatment modalities remains weak.

In recognition of this gap in our understanding, the Global Fund to Fight AIDS, TB and Malaria (Global Fund) and Roll Back Malaria has called for greater attention to gender, HIV, malaria and their intersections. Moreover, through the new Sustainable Development Goals (SDGs), governments have committed to several goals related to poverty reduction, gender equality and health, accompanied by specific targets to eradicate malaria, and to have malaria incident data gender-disaggregated (target 3.3), create national pro-poor and gender-sensitive development strategies (target 1.7), and eradicate other non-communicable diseases that contribute to malaria susceptibility (target 3.4). In many ways gender-specific malaria vulnerabilities and effects are both causes and consequences of poverty. As such, a focus on gender-sensitive malaria interventions is a development imperative. The time to act is now.

While the need is acute, the resources are finite. The Global Fund, among other key players, has adopted strategic investment approaches to allocating funds, which place a premium on optimizing impact, cost-effectiveness and sustainability of malaria interventions. This means that programme planners and managers are increasingly being asked to draft 'investment cases' or evidence-based documents that outline how allocating resources to certain interventions will lead to concrete, measurable and sustainable results. Since addressing the gender dimensions of malaria is essential to combating the disease, malaria interventions based on gender equality and human rights are essential to achieving successful outcomes. In this way gender-sensitive malaria interventions make economic sense.

This Discussion Paper on gender and malaria is intended to support practitioners, civil society and government partners wishing to make the investment case for increased and improved malaria programming that addresses the specific vulnerabilities and needs of both males and females who are affected by or at risk of malaria. The paper summarizes the existing evidence base, demonstrating the ways in which gender impacts on malaria risks and effects (including those that intersect with HIV), and highlighting existing data and implementation gaps. This information is useful for UNDP in its role in supporting governments to implement and operationalize the development agenda by 2030, by turning commitments into action. The evidence, and particularly the recommendations presented in this paper will also be useful for practitioners preparing concept notes for the Global Fund resources. As such, this paper has been designed to be used in conjunction with UNDP's 2015 '**Checklist on Integrating Gender into the Processes and Mechanisms of the Global Fund to Fight HIV, TB and Malaria**'.

# EXECUTIVE SUMMARY

Malaria transmission is determined in large part by social, economic and cultural factors, which intersect with sex-specific and gender-specific vulnerabilities to impact women's and men's ability to prevent malaria infection and access medicines for prevention and treatment – both for themselves and for their children. These vulnerabilities are in some cases known but in far too many cases under-researched or simply not taken into account by current programme and policy interventions.

Women and men, boys and girls are vulnerable to malaria in different ways that are shaped by their socially determined roles within their communities and families. Women have less access to information about how to protect themselves from malaria than men, due to lower literacy rates. Women's traditional household roles, such as cooking the evening meal outdoors or waking up before sunrise to prepare the household for the day, may also put them at greater risk of malaria infection. Additionally, women may be less likely to sleep under long-lasting insecticidal nets (LLINs) due to cultural and social pressures. The same traditional gender roles, however, can also heighten males' risk of malarial infection. Men working outdoors in forestry, fishing, mining, agriculture or ranching may be at greater risk of contracting malaria when they work during peak biting times. For this reason, malaria programmes that provide prophylactic materials and information need to consider how these will be used differently by women and men, boys and girls in a community and tailor their interventions accordingly.

Pregnant women are even more vulnerable than other adults to malaria, which can cause severe anaemia and death. And yet this vulnerability is heightened for young, poor and rural women and women living with HIV. Young women in their first pregnancy are especially vulnerable to malaria of the placenta, because they have not yet developed the immunity that comes with multiple pregnancies. Richer, educated, urban women are more likely to receive intermittent preventative treatment in pregnancy (IPTp) than their poorer, uneducated, rural counterparts. Pregnant women who are co-infected with HIV and malaria are also at greater risk of severe anaemia and death, and are more likely to transmit HIV to their babies, and their babies are nearly twice as likely to contract malaria compared to babies born to women who are not living with HIV.

*Studies have shown that, while the disease burden is greater for adult males, the economic effect is greater for female family members, who face increased pressures to provide food and medicines, as well as a rise in care-giving responsibilities.*

Social and cultural norms also impact women's and men's ability to access malaria prevention and treatment services. For example, women may have to ask their husband for permission to access malaria treatment for themselves and their children, or experience harassment by their husbands and in-laws, both for expenses due to malaria medicines and because they cannot continue household work when sick. When women are able to access malaria treatment services, they may be blamed for seeking treatment at a late stage in their illness.

Additionally, women and men tend to seek different services when they experience malaria symptoms, driven by gender-specific economic necessity. Because poor women cannot afford treatment, they are more likely than men to rely on traditional remedies, which are not effective. Even when the correct course of treatment is prescribed, women may not be able to follow it because they cannot afford it or are too busy with care-giving responsibilities to obtain it. This can lead to lower dosing, sharing pills and/or not completing the course of treatment. Once malaria affects a family, studies have also shown that, while the disease burden is greater for adult males, the economic effect is greater for female family members, who face increased pressures to provide food and medicines, as well as a rise in care-giving responsibilities.

# ECONOMIC SOCIAL AND CULTURAL DETERMINANTS OF MALARIA TRANSMISSION AND TREATMENT

Evidence indicates that malaria transmission is determined in large part by social, economic and cultural factors that intersect with sex-specific<sup>i</sup> and gender-specific vulnerabilities.<sup>ii</sup> These vulnerabilities are largely still under-researched and not considered. Gaps in our understanding are important to explore further, as they address deeper gender inequalities, and because interventions that address the structural drivers of the disease are likely to be more effective and sustainable. Investment to address the social determinants of malaria has the potential to significantly move forward our understanding of the disease, and target interventions towards the most vulnerable and underserved groups.

## Gender-differentiated access to information about malaria

There has been little work on how education impacts women's and men's access to information about malaria prevention and treatment. The work that has been undertaken indicates that women's understanding of malaria prevention and treatment is significantly weaker than that of men, due to women's comparatively lower literacy levels. One study found a higher prevalence of language barriers for women accessing malaria services, due to higher rates of illiteracy.<sup>1</sup> In Yemen, women under study had vaguer understandings of the methods of malaria transmission compared to men, and more frequently associated the disease with flies, missing breakfast, drinking bad water and breast feeding.<sup>2</sup>

## Gendered dress norms and vulnerability to malaria

Very little research has been undertaken on gendered dress norms and malaria vulnerability. A study in Nigeria concluded that different norms of dressing for men and women accounted for significantly higher malaria infection rates among men. The study argued that in hot weather men are more likely than women to expose their bodies, thereby increasing their chance of being bitten by mosquitoes. Women, the study noted, are usually fully covered and tend to stay indoors, helping out with household chores.<sup>3</sup>

## Gendered division of labour and vulnerability to malaria

A gendered division of labour and leisure activities contributes to differential vulnerability to malaria in women and men, boys and girls.<sup>4</sup> Men working outdoors in forestry, fishing, mining, agriculture or ranching may be at occupational risk of contracting malaria, especially when their work occurs during peak biting times around dusk. In some pastoral societies, boys and young men leave their homes to watch over livestock as they graze. They have very little, if any, protection from malarial mosquitoes and are often far from treatment facilities should they become ill.<sup>5</sup> Men from low-endemicity regions may also migrate to areas of high-endemicity for work, putting them at increased risk.<sup>6</sup>

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In some communities, women's household responsibilities, including cooking the evening meal outdoors or waking up before sunrise to prepare the household for the day, may put them at greater risk of malaria than men.<sup>7</sup>

<sup>i</sup> Those factors that relate to male or female biology.

<sup>ii</sup> Those factors that relate to social roles, behaviours and expectations of males and females.

# ECONOMIC SOCIAL AND CULTURAL DETERMINANTS OF MALARIA TRANSMISSION AND TREATMENT

## Gendered sleeping arrangements and access to bed nets

Gender-specific sleeping customs can affect women's and men's vulnerability to malaria. In some contexts, men have very little access to long-lasting insecticidal nets (LLINs) if they predominantly sleep outside.<sup>8</sup> Conversely, a study in Bungoma, a district in western Kenya, found that midway through pregnancy, wives leave the matrimonial bed with its LLIN protection, to sleep with the children on the floor. This leaves pregnant women — a group which is particularly vulnerable to malaria — and their children unprotected against mosquito bites.<sup>9</sup> A study on preventing malaria in pregnancy in the Imo River Basin of Nigeria found that when a household only has one net, the male head of the household may have priority access.<sup>10</sup> Conversely, a survey of bed net use following a mass distribution campaign in Kano State, Nigeria, found that a higher percentage of women than men used LLINs (57.2 percent vs. 48.8 percent). After controlling for several other factors, women remained more likely than men to use LLINs, while adolescent boys remained least likely to use a treated bed net.<sup>11</sup>

## Gendered social and cultural norms that impede access and adherence to malaria services

Social and cultural norms impact women's and men's ability to access malaria prevention and treatment services. In Kenya, for example, women must often ask their husband for permission to access malaria treatment for themselves and their children.<sup>12</sup> Mothers in Yemen had difficulties seeking treatment for their children when male family members were not available to give the necessary medical consent.<sup>13</sup> Similarly, a study in Ethiopia found that restricted mobility among women impeded their ability to attend primary health care clinics for malaria testing and treatment.<sup>14</sup> In Jharkand, India, women, especially those aged 35–40 years, have faced harassment from their husbands and in-laws for expenses incurred in relation to their illness and their inability to continue household work.<sup>15</sup> Some studies have found that women are reluctant or unable to attend services when the health practitioners are predominantly or exclusively men. In fact, a woman who seeks services from a male provider can be accused by her family of sexual infidelity.<sup>16</sup> Other studies in Gambia, Kenya and Malawi found a strong cultural attribution of fever among women with supernatural causes rather than medical illness.<sup>17</sup> These gender-driven superstitions reduced women's ability to access medical malaria services. When women do access malaria treatment services, they are sometimes blamed for seeking treatment at a late stage in their illness. Even when the correct course of treatment is prescribed, women may not be able to follow it due to a lack of resources and care-giving responsibilities, both of which can lead to lower dosing, sharing pills and/or not completing treatment.<sup>18</sup>

- *Women often have to ask for their husband's permission to access malaria treatment (Kenya)*
- *Mothers often find it difficult to seek treatment for children, without male family support (Yemen)*
- *Women's restricted mobility can impede their access to malaria testing and treatment (Ethiopia)*

Some studies have investigated the impact of gender norms on men's access to malaria services. These studies have found that men underutilize health care services for malaria as compared to women in similar circumstances, possibly due to male social norms that dictate that men must be strong and 'get over' their illness by themselves, or because men assign a lower priority to their health or feel uncomfortable asking for assistance.<sup>19</sup>

# ECONOMIC SOCIAL AND CULTURAL DETERMINANTS OF MALARIA TRANSMISSION AND TREATMENT

## Poverty and gendered access to malaria services

Poor women are disproportionately affected by malaria. A community-based study in Cameroon, for example, found that “the burden of illness rests disproportionately on economically disadvantaged women and on women with low social status. Excess morbidity was found among women who were not employed, women living in poor neighborhoods, and those living in households without modern amenities.”<sup>20</sup> Similarly, a study in Ghana found that women who lacked economic support from male relatives, or who disagreed with husbands or family elders about appropriate malaria treatment, faced difficulties accessing health care for children affected by malaria. These women also bore most of the cost of seeking treatment, which was disproportionate to their access to resources.<sup>21</sup>

### *Case Study: Côte d’Ivoire*

**A study in Côte d’Ivoire linked women’s economic power to the absence of irrigation projects and found that women with more economic power were better able to access malaria treatment for their children: “An important customary rule [in the four villages studied] is that the person who starts a treatment is responsible for paying all the related bills. In villages without irrigation, women have more income at their disposal. So, if the first treatment for malaria fails, these women quickly buy antimalarial pills from the local market to start a second course of treatment. If malaria still persists, they then ask the head of the household to take the child to the health center. In villages with irrigation, women have less money at their disposal. So, if the first treatment fails, these women generally don’t buy antimalaria pills. Instead, they ask their husband to take the child to the health center. ... This referral takes place later than the second treatment option (anti-malarial pills) initiated by women [who have access to more sources of income] in unirrigated villages.”**

*When male family members contract malaria, the economic burdens on female family members increase significantly, as do women’s care-giving responsibilities.*

A number of studies have found that women and men tend to seek different types of services when they experience malaria symptoms, and that these choices are driven by gender-specific economic necessity. The study in Jharkand, India, for example, found that when women live far from public health services they rely on *ad hoc* malaria treatment provided by traditional healers who visit their village. Women depend on the ‘compounders’ for treatment because they provide flexible payment arrangements. Conversely, men in similar circumstances sought immediate treatment (such as medicines

from chemists). Better access to cash and credit, and the power to make decisions about liquidating household assets provided men with an advantage in getting treatment.<sup>22</sup>

When male family members contract malaria, the economic burdens on female family members increase significantly, as do women’s care-giving responsibilities: a study in Ghana, for example, found that 64 percent of all tasks normally undertaken by a healthy male family member were performed by women. The women expressed concern about the loss of the main economic provider as well as about having to work harder to earn money for medicine and food. The study notes that although the disease burden was greatest among adult males, the indirect economic burden of malaria was greater for women.<sup>23</sup>

## Impact of malaria on pregnant women and their children

Pregnancy is the only widely recognized and adequately researched sex-specific aspect of malaria. Indeed, pregnant women are the main adult risk group in most malaria-endemic areas. However, even this biological susceptibility is heightened for poor, young and rural women in ways that are not adequately addressed in the malaria response. As such, increasing investment in anti-malaria interventions that target pregnant women while simultaneously addressing the social, cultural and economic factors that heighten susceptibility has the potential to progress our understanding of the disease, and target interventions towards the most vulnerable and underserved groups.

### *Disease Burden at Glance*

**Worldwide, an estimated 125 million pregnancies occurred in areas of malaria transmission in 2007, resulting in about 83 million live births.**

- **Pregnant women in malaria-endemic areas have an up to 50 percent higher risk of infection during pregnancy compared with non-pregnant women.**
- **In areas of high and stable *plasmodium falciparum* transmission, maternal malaria infection is frequently asymptomatic but is associated with maternal anaemia. In low transmission or epidemic areas it more frequently triggers clinical symptoms and severe disease.**
- **Prevalence of malaria in pregnancy is much higher in girls and women aged 15–19 years and decreases with each subsequent pregnancy. The disease is also much more prevalent in women living with HIV regardless of the number of times they have been pregnant.**

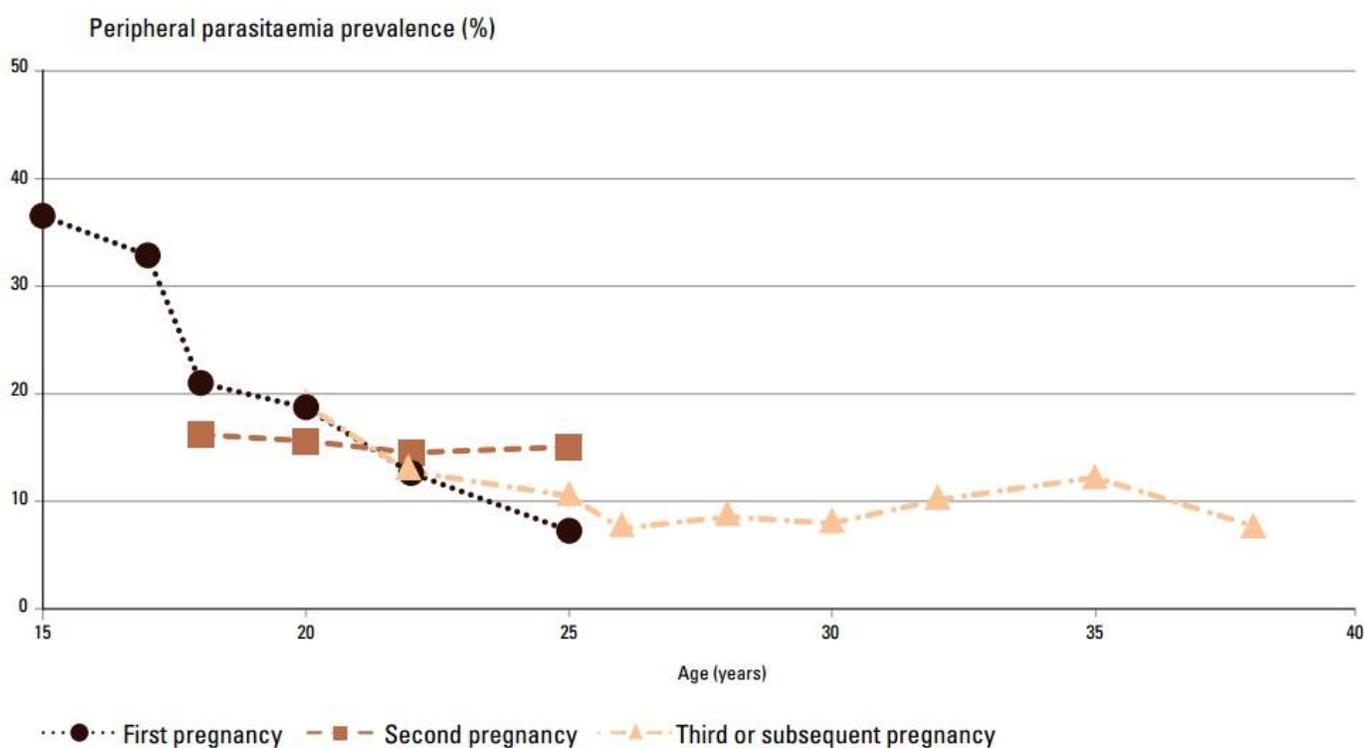
*Source: Roll back Malaria 'The Contribution of Malaria Control to Maternal and Newborn Health', July 2014 [would source this with a footnote like you do any other reference]*

Pregnancy alters women's immune status, especially at the mother-foetal interface at the placenta, making women more susceptible to malaria and increasing the risk of maternal illness, severe anaemia and death.<sup>24</sup> Pregnant women are four times more likely to suffer attacks of symptomatic malaria than other adults. *Plasmodium falciparum* (the parasite that causes one of the most deadly forms of malaria) is generally accepted as a leading cause of anaemia in pregnant women, which causes an estimated 10,000 maternal deaths each year.<sup>25</sup> In Africa, where 90 percent of malaria among pregnant women occurs, haemorrhage is the leading cause of maternal deaths — accounting for 34 percent of maternal deaths.<sup>26</sup> Severely anaemic mothers tend to lose more blood during delivery<sup>27</sup> and postpartum, and have reduced ability to tolerate severe haemorrhage.<sup>28</sup> Although malaria infection rates among pregnant women are much lower in malaria-endemic regions outside Africa, lower levels of immunity mean these women are more likely to experience severe disease when infected.<sup>29</sup>

# MALARIA AND PREGNANCY

While the recorded numbers of malaria-associated maternal deaths are startling, they are likely to be vastly underestimated, due to the indirect way in which malaria contributes to maternal mortality, difficulties in diagnosing subclinical infections and weak reporting systems. Maternal malaria also adversely impacts newborns and infants. Malaria during pregnancy increases the risk of spontaneous abortion, stillbirth, premature delivery and low birth weight — a leading cause of child mortality.<sup>30</sup> In Africa, between 75,000 and 200,000 children under a year old are estimated to die every year as a result of malaria infection in utero, and approximately 11 percent (100,000) of infant deaths are due to low birth weight associated with in utero *plasmodium falciparum* infection.

FIGURE 1: Source: Source: Roll back Malaria 'The Contribution of Malaria Control to Maternal and Newborn Health', July 2014



Source: Roll back Malaria 'The Contribution of Malaria Control to Maternal and Newborn Health', July 2014

## Malaria disproportionately affects young, rural and poor pregnant women

Young women in their first pregnancy are exceptionally vulnerable to placental malaria infection — which causes low birth weights in newborns — because these women have yet to develop the higher levels of immunity that evolve with exposure to malaria over the course of successive pregnancies.<sup>31</sup> For this reason, pregnant girls and women under the age of 20 are at highest risk of malaria infection,<sup>32</sup> and that risk diminishes with each subsequent pregnancy. Young women also have less access than older women to life-saving prevention and treatment modalities. A meta-analysis of national survey data from Africa for 2009–2011 found inequities by age,

# MALARIA AND PREGNANCY

with young women less likely to use IPTp<sup>iii</sup> or LLINs compared with older women.<sup>33</sup> Poor, rural and uneducated populations are more affected by malaria, and this also holds true for pregnant women. For IPTp in particular, richer, educated, urban women are more likely to receive treatment than their poorer, uneducated, rural counterparts.<sup>34</sup>

## Malaria-HIV co-infection during pregnancy

*Women who are pregnant and co-infected have been shown to have two-fold higher HIV viral concentrations than women who do not have malaria, and some research has found an associated increased risk of mother-to-child transmission of HIV.*

While women who have had successive pregnancies develop a level of immunity to malaria, the same does not hold true for women who are co-infected with HIV. HIV impairs immunity to malaria, and co-infection in women has been found to increase malaria parasite prevalence and density, regardless of the number of times a woman has been pregnant.<sup>35</sup> HIV aggravates malaria-associated anaemia, and pregnant women who are co-infected with malaria and HIV are at greater risk of severe anaemia and death.<sup>36</sup> Placental malaria infection, in conjunction with HIV, nearly doubles the risk of malaria infection and morbidity in infants born to co-infected women.<sup>37</sup> Women who are pregnant and co-infected have been shown to have two-fold higher HIV viral concentrations than women who do not have malaria, and some research has found an associated increased risk of mother-to-child transmission of HIV.<sup>38</sup> Research on concurrent

malaria and HIV treatment during pregnancy remains underdeveloped. Possible interactions between antiretroviral treatments, malaria and anti-malarials have been described among people living with HIV, but it is not yet clear if these have clinical consequences.<sup>39</sup>

## Poor access to malaria prevention and treatment services for pregnant women

Although pregnant women are widely considered a high-risk group for malaria, and are generally prioritized in national programmes, life-saving prevention and treatment services remain beyond the reach of many pregnant women in malaria-endemic regions, especially for those women who are most vulnerable. The World Health Organization (WHO) recommends providing IPTp and LLINs to pregnant women through antenatal clinics (ANCs): IPTp at every ANC visit in the second and third trimester, and LLINs at the first ANC visit, as early as possible. However, despite increasing numbers of women in malaria-endemic regions attending ANC services at least once during their pregnancy, delivery of malaria prevention and treatment modalities via ANC services remains low, and has been falling in some countries. IPTp coverage and LLIN use among pregnant women increased only modestly between 2004–2008 and 2009–2012, from 14 percent to 22 percent and from 17 percent to 39 percent, respectively.<sup>40</sup> Household surveys in Africa illustrate ongoing missed opportunities for the delivery of IPTp via ANC. Among nine countries with available surveys in 2010–2012, pregnant women attended ANC as follows: at least once (about 95 percent); at least twice (92 percent); three times (80 percent); and four times (51 percent). The proportion who received one IPTp dose, however, was 48 percent, two doses 27 percent, three doses 11 percent and four doses 1 percent.<sup>41</sup>

<sup>iii</sup> IPTp consists of the administration of full, curative-treatment doses of an effective anti-malarial drug at predefined intervals during pregnancy, regardless of whether or not a woman is infected with malaria parasites.

## Lack of effective treatment during the most vulnerable time of pregnancy—the first trimester

Malaria infection occurs more often in the first or second trimester of pregnancy, and women who contract malaria early in their pregnancy disproportionately give birth to low-birth weight babies.<sup>42</sup> For this reason, it is particularly important to reach women in their first trimester with prevention and treatment services. One study, conducted in the Thailand-Myanmar border area, found that women were less likely to contract malaria in the second or third trimester, highlighting the importance of early malaria prevention, possibly even before conception.<sup>43</sup> However, women's choices of anti-malarials during pregnancy are limited because, although the range of available anti-malarials has grown steadily over the past 50 years, relatively few of these drugs have proven safe and efficacious in pregnancy, due to the systematic exclusion of pregnant women from clinical trials due to risks, complexities and cost.<sup>44</sup> The most effective anti-malarials — artemisinins — are not recommended in the first trimester of pregnancy, and these drugs or their combinations are currently recommended only for treatment in the second and third trimesters.

*Despite increasing numbers of women in malaria endemic regions attending antenatal clinic (ANC) services at least once during their pregnancy, delivery of malaria prevention and treatment modalities via ANC services remains low, and in some countries, has been falling.*

# RECOMMENDATIONS

## Data, research and programmatic gaps

There are still significant gaps in our understanding of how sex, gender roles and poverty intersect to create gender-specific vulnerabilities. These gaps are important, as they illustrate where there is the most need for funding and investments in terms of research, programming and other interventions. Gender analyses of malaria programmes are virtually non-existent, and no existing gender assessment tool is specifically tailored to malaria. For this reason, the impact of gender norms and associated gender inequities — including education levels, access to economic assets, and access to and use of malaria prevention and treatment — remains severely under-explored. Malaria prevention and treatment services are, therefore, not gender-sensitive. While WHO has taken note of stagnant or falling access to LLINs and IPTp via ANC, no country-level analysis has been undertaken to understand the reasons for these trends, and programmes have not been designed or altered to address this widening gap. Even where studies have identified gender gaps and gender differences in vulnerability, programmes have not adjusted to address these key populations in an effective, gender-sensitive manner. For example, although studies have shown that the highest overlap between malaria and HIV occurs among adolescent girls, control activities are directed towards other target groups.<sup>45</sup> Similarly, although pregnant girls and young women have been shown to be at heightened risk of malaria, control efforts that focus on pregnant women fail to target pregnant adolescents and their partners.<sup>46</sup>

## Recommendations

To address the gender-specific dimensions of malaria, it is necessary to drive resources towards interventions, research and programming specific to many of the gaps in our understanding. Included below are examples of interventions that partners and funders can support in order to address the gender-specific needs and vulnerabilities of populations affected by or at risk of malaria:

<b>1. <i>Develop a gender assessment tool tailored to malaria</i></b>	There is an urgent need to develop a malaria-specific gender assessment tool that will enable countries to identify gender-specific vulnerabilities, and assess and address the gender-differentiated needs of women and men, boys and girls.
<b>2. <i>Develop a compendium of good practices in gender-sensitive malaria service provision</i></b>	A renewed focus on gender and human rights at the Global Fund has led some countries to begin to examine gender-specific needs and vulnerabilities in the context of malaria. For example, Cambodia has recently identified the wives and children of forest workers as a key vulnerable population, due to an increasing tendency for families to accompany men during work travel. In response, Cambodia has initiated a programme to provide malaria prevention and treatment specifically targeting the wives and children of itinerant forest workers. <sup>47</sup> More examples of this type may already be developed or in the process of emerging; however no systematic documentation of this trend has yet been undertaken. A best practice compendium of gender and malaria approaches would assist countries in developing gender-sensitive malaria programmes.
<b>3. <i>Improve capacity for gender analysis and programming</i></b>	The bulk of malaria programmes globally are not gender-sensitive, and even in sex-specific services such as ANC there is limited capacity to provide malaria services or identify gender-specific barriers to malaria prevention and treatment uptake. Malaria-specific gender trainings should be developed and provided at all levels.

# RECOMMENDATIONS

## 4. *Require sex-disaggregated data and develop gender-specific indicators*

Compared to HIV and tuberculosis programmes, malaria programmes lack comprehensive sex-disaggregated data and gender-specific indicators for malaria. Requiring sex-disaggregated data, and developing and collecting data on gender-specific indicators, will assist countries and programmes to accurately identify the most vulnerable gender-differentiated populations and develop the programmes necessary to address their needs.

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