



Infant and mother surrounded by protective malaria bed net in Ghana. (Arne Hoel / Flickr)

Malaria and Most Vulnerable Populations

OVERVIEW

Malaria is an immense global health challenge. In 2022, there were 249 million malaria cases, an increase of 5 million as compared to 2021, leading to [608,000 malaria deaths in 85 countries](#). Yet while these numbers increase, [investment and attention to malaria in the past decade has stagnated](#)—and even decreased in areas. Notably, the total spending to eradicate malaria in 2022 was \$4.1 billion USD—just over half of the \$7.8 billion USD needed to stay on track to reduce new malaria infections and mortality rates by 90% by 2030.

Malaria eradication efforts offer a unique opportunity to advance global health security objectives by strengthening health systems, building resilience against infectious diseases, and promoting socioeconomic stability. Addressing the threats posed by malaria requires a comprehensive approach that includes expanding access to health services, enhancing disease surveillance, and promoting collaborative efforts on a global scale. Malaria eradication must be a global health priority to achieve the [Sustainable Development Goals by 2030](#).

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Malaria is [most commonly spread through the bite of an infected mosquito](#). Like other infectious diseases, it has the potential to spread rapidly across borders and continents, especially in regions where it is endemic. Shifting weather patterns caused by climate change, as well as human migration and resettlement, can lead to [malaria being introduced, or re-introduced, to previously low-transmission or malaria-free areas](#). And the emergence of the invasive mosquito species, *Anopheles stephensi*, in several African countries (it is originally native to South Asia and the Arabian Peninsula) is of further concern. Additionally, the *Anopheles stephensi* is [resistant to many insecticides](#) and can thrive in urban and man-made environments, making it a significant threat to malaria control and elimination.

In this policy brief, we look at the current state of malaria globally. We will assess the devastating effects of malaria on maternal, newborn, and child health outcomes, survey improved prevention methods and treatments, and underscore the role of community health workers and global health

diplomacy in the fight against malaria. Our brief offers recommendations to help prioritize malaria eradication in a time of increased prevalence and decreased global attention.

SPOTLIGHT ON MATERNAL, NEWBORN, AND CHILD HEALTH

Malaria increases the risk of maternal death before and after childbirth. Studies have shown that in parts of the world where malaria is endemic, it may contribute to [almost 25% of all maternal deaths](#). Women are at highest risk of severe infection during the first trimester, when [more than 60% of all malaria infections](#) during pregnancy occur.

Some strains of malaria parasite bind to the placenta, which diminishes the ability of any pre-existing immunity to control the parasite. [Malaria infection also contributes to maternal anemia](#), or low levels of iron in the blood. Both placental malaria and maternal anemia can lead to adverse neonatal health outcomes, such as stillbirth/fetal loss, preterm birth, and low birthweight.



Malaria vaccine (tpsdave / Flickr)



Some studies also point to [exposure in utero as an indicator of increased risk of infection for infants](#), though more research needs to be done to determine if this is directly due to exposure or a result of shared environmental factors.

Due to societal stigma, adolescent girls face additional barriers to accessing care when pregnant. Research shows that [adolescent girls are often already anemic](#) and [have a higher risk of contracting malaria](#) when they become pregnant, so any reduction of touchpoints with the health system is even more hazardous. Additionally, [pregnant people living with HIV have heightened risks of severe malaria infection](#). Both HIV and malaria are leading causes of death in low- and middle-income countries (LMICs), and it is estimated that [HIV-malaria co-infection leads to around 3 million deaths yearly](#).

PREVENTION AND TREATMENT

The core range of interventions to prevent and treat malaria infection in endemic countries include insecticide-treated bed nets, indoor residual spraying, antimalarial medication, and rapid diagnostic testing.

Early diagnosis and treatment for those infected with malaria is critical to preventing severe disease and death. However, [barriers to malaria treatment](#), including increased resistance to the compounds that make up the vast majority of antimalarial drugs, present challenges to controlling its spread. Adequate treatment is also prevented by poor medicine quality due to weak regulation of pharmaceutical products in some countries, as well as global investment gaps for malaria.

Targeted treatment and prevention for malaria during pregnancy, called intermittent preventive treatment of malaria in pregnancy (IPTp), is another key weapon in the fight. It involves the administration of an antimalarial drug to all pregnant people in their second trimester,

regardless of the presence of the malaria parasite. This treatment is both successful and cost effective, and [IPTp has been shown to decrease the incidence of babies with low birthweight](#) by 29%, severe maternal anemia by 38%, and infant mortality by 31%. Yet IPTp coverage is low, with barriers including cost, poor knowledge of its availability by both healthcare workers and pregnant people, high workload of antenatal healthcare workers, medicine stockouts, and poor supervision of treatment uptake to blame.

While barriers to seeking diagnosis and treatment remain, the scale up of rapid diagnostic tests (RDTs) has greatly expanded the availability of malaria testing. These tests do not require electricity and can be performed by personnel with minimal training, and their use has increased tremendously over the past two decades, with [345 million RDTs distributed in malaria-endemic countries in 2022](#).

For children, additional prevention strategies include [seasonal malaria chemoprevention \(SMC\)](#), which is the intermittent administration of antimalarial medicine for children living in areas with seasonal transmission of malaria, regardless of their infection status. SMC is a highly successful and cost-effective prevention mechanism. In 2022, [49.4 million children received SMC across 17 high-transmission countries](#).

Insecticide-treated nets (ITNs) are the main prevention intervention for all populations. For pregnant women during the first trimester, when they are most at risk and unable to take preventive drugs, these insecticide-treated nets are key. Yet [concerns about the costs and durability of nets remain](#). Also, insecticide resistant mosquitos, such as the *Anopheles stephensi*, have increased the number of cases of malaria in endemic countries. Increasing insecticide resistance also means that newer, more costly nets, often with multiple insecticides, are warranted to ensure optimal



protection of vulnerable populations including pregnant people and young children.

Advances like the [development of two malaria vaccines](#)—the RTS,S and the R21/Matrix-M—provide a valuable new tool in prevention for children under the age of five globally. The RTS,S vaccine was approved by the World Health Organization in 2021 and pilot tested in Ghana, Malawi, and Kenya. In 2024, [it was rolled out in Cameroon](#) as the first routine malaria vaccine program globally. The R21/Matrix-M vaccine was approved in 2023, and can [make up the availability gap](#) left by the low supply of the RTS,S vaccine compared to demand. Both vaccines were shown to be safe and effective at preventing malaria in children, with approximately [75% of malaria cases prevented when administered seasonally in areas of high transmission](#).

To date, there is [no vaccine for malaria that is approved for use among pregnant women](#), despite

their heightened risk of contracting the disease during pregnancy. [Pregnant people are routinely excluded from clinical trials, including malaria vaccine trials](#), due to ethical considerations and fears of potential harm to the developing fetus. This exclusion slows progress and innovations to decrease malaria risks for mother and fetus, who are especially vulnerable to severe infection.

THE ROLE OF COMMUNITY HEALTH WORKERS

Community health workers (CHWs) are lay community members who support the health and wellbeing of a community they are familiar with through outreach, education, and treatment. With adequate support, [these frontline workers](#) play a key role in eradicating malaria globally. CHWs are [often trusted members of the community](#) they serve and are predominantly women. For example, in rural and remote communities in Sub-Saharan



In the Benishangul Gumuz region of Ethiopia health workers are going beyond to reduce home delivery. They are providing an integrated care from pregnancy to childbirth and beyond. (UNICEF/Demissew Bizuwerk / Flickr)





President's Malaria Initiative site in Cambodia (USAID/Richard Nyberg / Flickr)

Africa, [women make up 70% of the community health workforce](#) working to reduce malaria cases.

Typically, CHWs are [trained to administer antimalarial drugs, malaria diagnostic tests, and monitor malaria cases](#), as well as refer pregnant women for antenatal care. CHWs can help increase IPTp coverage by deploying a community-based approach, referred to as c-IPTp. Administering IPTp is critical to preventing malaria during pregnancy and CHWs can help ensure pregnant women have access to this care without facing additional barriers like travel conditions, societal stigmas, and domestic responsibilities.

However, inadequate training, supervision, supplies, and remuneration, and mental burnout can prevent CHWs from being able to provide a high standard of care to members of the community. Research shows that [providing incentives has improved the performance of CHWs](#) and that it promotes financial independence and self-motivation. It also promotes labor rights, a key component of the Sustainable Development Goals.

CHWs can greatly expand the reach of health services, [but these workers should be seen as one part of the health care system](#), rather than as a replacement for the system itself.

GLOBAL HEALTH DIPLOMACY AND SECURITY

Malaria, like other infectious diseases, poses a current global health security threat. According to the United States Agency for International Development (USAID), global health security is [“the existence of strong and resilient public health systems that can prevent, detect, and respond to infectious disease threats, wherever they occur in the world.”](#)

Global health diplomacy addresses global health security issues across borders and that require joint recognition and action. It addresses global health challenges through collaboration, negotiation, and policy dialogue among nations, international organizations, and other stakeholders. [Ultimately, the goal is to improve global health outcomes, promote equity, and strengthen health](#)



systems through joint country commitments.

However, it is important to recognize that historical colonialism has left lasting impacts on global health systems, making it imperative that global health diplomacy prioritizes principles of equity, transparency, and locally-led leadership.

The newly launched [Foreign Ministry Channel \(FMC\) for Global Health Security](#) was created to elevate health security as a national security and foreign policy priority. FMC recognizes the high risk of future pandemics and the need for foreign ministries and diplomacy when preparing for and responding to health security risks.

Global health diplomacy should always include affected communities in decision making processes, respect cultural contexts, and support capacity-building efforts in LMICs which are agreed upon by local communities. Done well, it advances political will and investment in issues such as malaria control and eradication programs through increased awareness and understanding among policy makers, governments, and international organizations.

RECOMMENDATIONS:

Protecting those most vulnerable to malaria requires a comprehensive and inclusive approach that prioritizes the needs of women and girls. By implementing the policy recommendations below, significant strides can be made towards achieving the goal of a malaria-free world while promoting gender equality and empowering women and girls to lead healthier lives.

1. Improve health service delivery.

Accessible health care services: Healthcare services, including malaria prevention, diagnosis, and treatment must be accessible to women and girls, especially in rural settings and for marginalized communities. This involves strengthening healthcare infrastructure, increasing the number of

healthcare facilities, utilizing CHWs to reach remote areas, and ensuring facilities and surrounding areas are safe for women and girls to access.

Integration with maternal and child health services: Malaria prevention and treatment must be integrated with maternal and child health programs to effectively reach pregnant women and infants. This includes providing IPTp to eligible pregnant women beginning in the second trimester of pregnancy. Currently, only 42% of pregnant women [receive the recommended three-dose regimen of IPTp](#). Implementing a [community-based delivery approach of IPTp](#) can increase availability and uptake in geographies with low IPTp coverage.

Community health workers: Community health workers (CHWs) are a valuable resource and asset in providing malaria prevention and treatment globally, but they are often overworked and underpaid. Training standards and requirements for CHWs are key to ensure quality care and increase the confidence of these workers. Increased investment and support to CHWs through mental health services, sufficient payment, proper training, supervision, and adequate supplies can improve their effectiveness in the communities where they work and assist in their retention. Additionally, addressing the [gendered barriers to fair wages and safe working conditions for occupations made up of majority women \(women comprise 67% of the paid global health and care workforce\)](#), will increase the value of health and care professions.

2. Increase empowerment through prevention education and awareness.

Empowerment through education: Investment in education programs targeted at women



and girls is essential to raise awareness on malaria prevention, symptoms, and treatment. Over the past two decades, health education interventions have been effective in improving knowledge of malaria and ITN usage. [Women educated in malaria cause, prevention, and treatment are more likely to take preventive measures, seek timely treatment, and contribute to community-based malaria control efforts](#) than women without this education. Such [education and preparedness must also be implemented in non-endemic countries](#) to manage the increasing burden of disease.

Distribution of mosquito nets: [Low utilization of insecticide-treated mosquito nets \(ITNs\) during pregnancy across endemic countries in Sub-Saharan Africa](#) increases the risk of contracting malaria during pregnancy. One survey of 11 East African countries found drastic variance in usage between countries on ITN utilization, with 64% of pregnant people using ITNs in Uganda as compared to just 6% in Zimbabwe. Pregnant women and young girls must be prioritized in targeted distribution programs for ITNs. These measures not only protect individuals from malaria but also contribute to reducing the overall burden of the disease in communities.

Vaccination education and distribution: Following the launch of the national vaccine rollout in Cameroon, [nine additional African countries are set to launch vaccine campaigns in 2024 and vaccine rollout plans are currently being finalized in several other African countries](#). In addition to increasing the availability of the vaccine, targeted education campaigns must be implemented to address vaccine hesitancy and build community trust. Additionally, increased investment is needed to manufacture a sufficient supply of the two currently available vaccines to ensure that all children are vaccinated against malaria.

3. Invest in community and local engagement, research, and storytelling.

Community engagement and participation: Malaria control initiatives must foster community engagement and participation, particularly involving women and girls. Empowering local women's groups and community health workers to lead awareness campaigns, distribute preventive tools, and encourage behavior change within their communities is vital.

Gender-responsive research and innovation: There is a need for increased investment in research and innovation to develop new tools and strategies for malaria prevention and control, with a focus on addressing the specific needs of women and girls. This includes continued research on safe and effective antimalarial drugs for pregnant people, particularly in the first trimester, and continued focus on effective insecticide-treated nets. Further research and development on vaccines for malaria should include considerations for pregnant people. Research must include lived experience and storytelling from communities and families impacted by malaria.

Gender-responsive monitoring and evaluation: Monitoring and evaluation frameworks for malaria control programs must be gender-responsive, with indicators that specifically measure the impact of interventions on women and girls. This includes [promoting sex-disaggregated data collection and analysis, including age and gender-specific indicators in monitoring frameworks, and targeting women and girls particularly in data collection](#). This will enable policymakers to track progress, identify gaps, and adjust strategies accordingly.



4. Develop and implement innovative global health diplomacy policy solutions.

Gender-transformative policy: Global health policies must go beyond the recognition of sex-differences related to prevention, detection, and treatment to directly address the social and gender norms that increase the risk for malaria for distinct populations. For women and girls, [performing traditional household roles, lower literacy rates, and increased caregiving burden](#), put them at increased risk, while for men and boys, [poor health seeking behaviors, self-medicating practices, and social and occupational activities](#) put them at heightened risk for severe infection.

Cross-sectoral collaboration: Adopting a multi-disciplinary approach to malaria prevention can help to address the underlying social

determinants of disease. Stakeholders across health and other relevant sectors, such as education, agriculture, climate, security, and gender equality must collaborate to ensure that solutions to eradicate malaria address these determinants. Utilizing local and community-led partnerships is vital in efforts to address and mitigate the effects of malaria as a global health security threat.

Locally-led solutions: Global health diplomacy can be a powerful tool to address malaria and address global health security issues. Discussions on innovation and treatment, areas for targeted research and investment, and policy and programming should be led by community members and experts impacted by malaria. Global efforts to eradicate malaria are futile without full engagement of and support from those most affected.



Mastewal Kassa is days away from delivering her baby. Maternity waiting homes help pregnant women living far away from health facilities to access much needed medical support. (UNICEF/Demissew Bizuwerk / Flickr)







This Global Health and Gender Policy Brief was partially informed by a series of expert roundtables hosted by the Wilson Center, in partnership with Malaria No More and the US President's Malaria Initiative (PMI).




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