



# WINNING THE FIGHT AGAINST MALARIA

## **HIV/AIDS and Malaria: The Deadly Problem of Co-Infection**

**HIV/AIDS and malaria** are among the most prevalent infectious diseases in sub-Saharan Africa and the leading causes of morbidity and mortality. **HIV/AIDS and malaria together cause more than 4 million deaths annually**, disproportionately affecting those in poverty and significantly impeding sustainable development. The co-infection of malaria and HIV increases the risk of morbidity and mortality for all individuals infected and are particularly dangerous for children under five and pregnant women. The complexity of co-infection has an impact on public health approaches and effective management of this interaction will require integration and strengthening of current public health and health care delivery systems.

More than **80% of malaria deaths occur in Africa**, with approximately 240-300 million malaria cases recorded each year. It is the leading cause of death in children under five years and a significant risk factor for pregnant women. Approximately **25 million people are living with HIV/AIDS in sub-Saharan Africa** and more than 33 million people are estimated to be living with HIV globally. In 2007 alone, it was estimated that 2.1 million children and adults died of AIDS.

That being said, co-infection with HIV/AIDS and malaria is most common in areas with generalized HIV epidemics and stable malaria transmission, such as sub-Saharan Africa. In some countries, more than 90% of the population is exposed to malaria and over 10% of adults are infected with HIV. However, co-infection is also present in certain countries in Latin America, the Caribbean and Southeast Asia.

The interactions of HIV/AIDS and malaria co-infection seem to impact both diseases; **malaria makes HIV worse and HIV makes malaria worse**. Although the consequences of co-infection can be severe for anyone, malaria and HIV interactions are **particularly dangerous for pregnant women and children**.

For pregnant women in areas of unstable malaria transmission, the risk of developing severe malaria is two to three times greater than for non-pregnant women. Studies show that HIV-positive women experience higher prevalence of **parasitemia at delivery, increased placental infection, and a greater risk of anemia**. Similarly, newborn infants of co-infected mothers have an increased risk of **low birth weight, preterm birth, and intrauterine growth restriction**.

In some studies, malaria and HIV/AIDS co-infection was associated with **increased risk of maternal, perinatal, and early infant death**. Compared with babies born to mothers who were both HIV and malaria-free, the risk of death was 18.05 for those born to mothers with malaria, 40.24 for those born to HIV-positive mothers, and 73.90 for those born to women co-infected with both HIV and malaria.

In the general population, studies estimate that **HIV may increase the incidence of clinical malaria by about 28% and mortality by 114%** in certain countries. In areas with stable malaria, HIV appears to increase the risk of asymptomatic and clinical malaria, and the risk of clinical malaria increases with greater HIV immune suppression.

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Many studies have also confirmed that **HIV-infected adults in malaria endemic areas are at increased risk of malaria**. Co-infection appears to increase the severity and complications associated with malaria in HIV-infected adults, especially in regions with unstable malaria transmission. Additionally, co-infection with HIV/AIDS and malaria seems to slow the clearance of parasites when taking anti-malarial drugs.

Like other opportunistic infections, **co-infection with malaria can transiently increase HIV viral load**, which can have an impact on HIV disease progression and HIV transmission. Another linkage between malaria and HIV stems from the possibility of acquiring HIV infection through blood transfusions as a result of malaria-induced anemia.

### **An Example of Success**

The “Reaching HIV/AIDS Affected People with Integrated Development and Support” (**RAPIDS**) project in Zambia is a project focusing on a community-driven response to the HIV/AIDS crisis and one of the few programs worldwide that has documented its efforts to integrate HIV and malaria prevention. RAPIDS provides orphans and vulnerable children care and support services, home based care and support services for those living with HIV/AIDS, as well as youth care and support services. Although the focus of the RAPIDS project is on HIV/AIDS, it also strives to integrate responses to a variety of diseases beyond HIV, one of which is malaria.

The project distributed approximately 500,000 long-lasting insecticidal nets (LLINs) to households and individuals affected by AIDS in 60 of Zambia’s 72 districts in both rural and urban areas. Notably, the infrastructure of the RAPIDS project, which includes a network of 12,000 volunteer Zambian caregivers who reach 122,000 Zambian households made vulnerable by HIV/AIDS, was successfully harnessed to deliver the LLINs.

Approximately 190,000 information, education, and communication (IEC) pamphlets were also distributed, along with malaria behavior change communication resources since past studies have shown that free access to LLINs does not necessarily correspond to correct use of the nets. The 12,000 RAPIDS caregivers were trained Zambian government health teams in epidemiology and prevention, with emphasis on the importance of LLINs, symptoms of malaria, and testing and treatment options.

The project expects that **the provision of the LLINs will prevent thousands of people living with HIV/AIDS from dying of malaria** and will prevent both children and adults from developing severe anemia and cerebral malaria. Additionally, training of community caregivers has empowered communities to prevent malaria.

