

# Preventing Co-Infection Slows HIV Disease Progression

March 18, 2013

G Brennan

Less than half of all HIV infected people in developing countries who are eligible for antiretroviral therapy (ART) are receiving it. Many people with HIV have not yet been diagnosed, the infrastructure to provide ART to those in need is limited, and access to care and treatment sites can be difficult due to political and geographic barriers. Given these difficulties, development of alternative, easily deliverable and employable interventions is imperative. HIV-infected individuals are more susceptible to a variety of endemic illnesses including malaria and diarrheal diseases, and co-infected individuals tend to have higher HIV viral loads and more rapid disease progression. In a recent paper published in *AIDS*, Drs. Judd L. Walson (University of Washington), and Barbra Ann Richardson (Vaccine and Infectious Disease Division), along with an international team of collaborators, demonstrate that providing patients with water filters and insecticide-treated bed nets significantly slow HIV progression among individuals who do not yet qualify for ART.

The team designed a prospective study in which one treatment group (n=228) received standard-of-care intervention for pre-ART patients, while the other group (n=361) also received an insecticide treated bed net and a point-of-source water filter. Health status at enrollment was similar between groups; individuals in both cohorts were ART naïve with a CD4 T cell count >350/ $\mu$ L. Patients in both arms had follow-up clinic visits every three months and blood samples were collected every 6 months for approximately 2 years to assess disease progression.

Although patients in the treatment arm were provided water filters and bed nets, the study did not preclude the control arm from using them as well. However, patients in the treatment arm were more likely to use both water filters (93.0% v 0.4%,  $p < 0.001$ ) and bed nets (97.3% v 82.4%,  $p < 0.001$ ). Individuals provided a bed net and water filter were significantly less likely to self-report diarrhea (RR: 0.65; 95% CI: 0.45 to 0.93) or to be diagnosed with malaria (RR: 0.66; 95% CI: 0.49 to 0.88) relative to the control group. Complementing their reduction in these endemic diseases, the intervention group also had a significantly smaller annual T cell loss due to HIV (-53.7 cells/ $\mu$ L/year) relative to control (-70.4 cells/ $\mu$ L/year,  $p = 0.03$ ).

“Projected levels of funding for HIV/AIDS programs are not sufficient to expand or even to sustain the levels of anti-retroviral treatment necessary to keep up with the epidemic. It is critical that we

identify alternative strategies to delay HIV disease progression as a part of this global response. This study suggests that treating or preventing other common infections among people living with HIV, including malaria and water-borne pathogens, may significantly delay the progression of HIV disease. Such a practical and inexpensive intervention may also have significant public health benefit by reducing the impact of malaria and diarrheal disease in communities in which these infections remain endemic,” said Dr. Judd L. Walson.

[Walson JL, Sangaré LR, Singa BO, Naulikha JM, Piper BK, Yuhas K, Onchiri FM, Otieno PA, Mermin J, Zeh C, Richardson BA, John-Stewart G.](#) 2013. Evaluation of impact of long-lasting insecticide-treated bed nets and point-of-use water filters on HIV-1 disease progression in Kenya. *AIDS*. Epub ahead of print, doi: 10.1097/QAD.0b013e32835ecba9



*Image courtesy Judd L. Walson*

A study researcher in Kenya at an HIV Care Site.