Tropical disease experts report missed opportunity to transform global HIV/AIDS fight

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Global HIV/AIDS prevention and treatment efforts are missing a major opportunity to significantly improve health conditions in poor countries by simply adding low-cost care for the many other chronic and disabling diseases routinely afflicting and often killing these same patients, according to a panel of disease experts who spoke at the annual meeting of the American Society of Tropical Medicine and Hygiene (ASTMH).

"People want better health; they do not understand why we silo diseases," said Judd Walson, a global health and infectious disease expert at the University of Washington. "If you die from malaria, you don't care that your HIV was treated. Communities want us to leverage the resources we have to treat and prevent disease as effectively as possible."

Walson and his colleagues on the panel noted that many victims of HIV/AIDS also typically suffer from one or more of about 17 neglected, but burdensome, tropical diseases often called "diseases of poverty" because they prey on the "bottom billion"—the world's poorest people. They include ailments such as trachoma, schistosomiasis, lymphatic filariasis, leishmaniasis, Chagas disease and onchocerciasis, all of which are either insect-borne disease, bacterial infections, or caused by parasitic worms.

Despite the illness and deaths attributable to these diseases, proposed US funding for fighting them was only about $155 million in 2011, or about

3 percent of the $5.6 billion invested in HIV/AIDS efforts. Moreover, the programs often exist in isolation from one another with, for example, many programs restricting support only to antiretroviral drugs to treat AIDS.

Yet tropical disease experts note that in places like sub-Saharan Africa, where neglected diseases affect 1.4 billion people, co-infections with HIV are common. And they see mounting evidence that dealing with multiple diseases at the same time and in the same place is more cost-effective and clinically beneficial.

Walson pointed to a program in Western Kenya that focused on a community suspected of having high levels of HIV but whose remote location made it hard to reach to conduct testing. The program promised access to free bed nets and water filters to those residents who came in for a test. In just six days, some 10,000 residents turned out for the free nets and filters. The result: 1181 people were found to be HIV positive and referred to care while thousands of people gained new tools for preventing malaria and water-borne diseases.

In another example of the potential benefits of targeting multiple problems in a single intervention, a study initially focusing on treatment for onchocerciasis, a parasitic disease also known as river blindness, was broadened to offer insecticide-treated bed nets (ITNs), malaria drugs and vitamin A. The study, which covered an area with 2.35 million people, increased bed net coverage by nine-fold.

Sten Vermund, Professor of Pediatrics and Director of the Vanderbilt Institute for Global Health, noted the need to address any co-infections that might increase HIV viral load. He pointed to studies linking higher viral load with a higher likelihood of transmitting HIV, and a low load with reduced disease progression and HIV transmission risk. He said a review of a wide number of studies revealed that treating a variety of co-

infections, including TB, malaria, schistosomiasis, filariasis, herpes, gonorrhea and syphilis decreased viral load to varying degrees.

"If de-worming efforts for neglected diseases reduces the viral load even just a little, then you could expect some benefit for preventing or slowing HIV transmission," said Vermund. "But it's also helpful to keep in mind that a majority of people don't know they have HIV. An effective mass de-worming campaign could have huge effects without even knowing the community's HIV status."

Peter Hotez, ASTMH President and founding dean of the National School of Tropical Medicine at Baylor College of Medicine, and Alan Fenwick, Professor of Tropical Parasitology and Director of Schistosomiasis Control Initiative at the Department of Infectious Diseases Epidemiology at Imperial College of London, offered a presentation focused on improved treatment for schistosomiasis. Schistosomiasis is a preventable, chronic, inflammatory condition caused by a parasite infection that is found in approximately 220 million people, most of whom live in sub-Saharan Africa. The parasite swims in water and burrows into human skin on contact. It is linked to an estimated 280,000 deaths each year. In women, the disease often affects the cervix and vagina where it can cause infertility, painful intercourse, and post-coital bleeding. One type of schistosomiasis known as female urogenital schistosomiasis affects girls and young women and is associated with HIV infection.

"These women are at highest risk of HIV infection and should be the focus of public health interventions," said Fenwick.

The high prevalence of urogenital schistosomiasis appears to be associated with higher rates of HIV and the genital lesions seen with this type of schistosomiasis may contribute to the acquisition of HIV in women. The researchers believe schistosomiasis interventions can be

seen as a type of HIV/AIDS control, with mass treatment in girls aimed at preventing the onset of genital lesions.

In his President's address to the ASTMH meeting, Hotez challenged his colleagues to move beyond a focus on individual conditions to embrace a concerted campaign against the totality of tropical diseases. Referencing Bill Gates' call for adopting an "audacious goal" of eradicating malaria, Hotez called for expanding the "audacious goal" to ridding the world of all its neglected tropical diseases.

He portrayed neglected diseases as everyday manifestations of the Four Horsemen of the Apocalypse in that they cause pestilence, death, underlie famine and worsen the conditions of war. Hotez noted the importance of fighting disease to the success of international anti-poverty initiatives. "These diseases don't just occur in a setting of poverty; these diseases are a stealth cause of poverty in low and middle income countries," he said.

He quoted John Gardner, the Secretary of Health under President Lyndon Johnson, who said: "There are no better grounds on which we can meet other nations and demonstrate our own concern for peace and the betterment of mankind than in a common battle against disease.

In a separate presentation at ASTMH, Paul Farmer, founder of Partners in Health, also underscored the importance of attaching the fight against neglected diseases to a broader agenda.

"We need to understand the impact we can have when we link our understanding of improvements in people's lives to policy endeavors that can changes the lives of millions," he said. "Often this does not happen. The question is how can we build consensus in the scientific community and among our allies; how can we build coalitions to pull those policy levers more effectively? All of the diseases that affect the poor are

neglected."

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